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ABSTRACT

This set of proceedings from the Association Montessori International (AMI/USA) 1996 conference contains the conference schedule and 20 presentations. The conference presentations are: (1) "The Dawning of Wisdom" (Montessori); (2) "The Support of Montessori Education to Human Potential" (Montanaro); (3) "Healthy Environment: Healthy Children: Healthy Culture" (Orion); (4) "Cosmic Education vs. the Public School Curriculum--Are the Two at Variance?" (Stephenson); (5) "The Atrium: Silence, Simplicity, Movement, Symbol and Joy" (Kaiel); (6) "Family Star--A Montessori Grassroots Early Headstart Initiative" (Urioste); (7) "Beyond the Basic Needs: Nurturing the Full Potential of the Upper Elementary Child" (Denton); (8) "Building the Elementary Program and Transitional Program Strategies" (Davidson); (9) "Practical Applications of Montessori in the Home" (Helfrich); (10) "An Approach to the Resolution of Conflicts in a Positive Way" (Dubovoy); (11) "Talking with Parents: Conferences and Communications" (Caudill); (12) "Dr. Maria Montessori--A Contemporary Educator?" (Stephenson); (13) "The Relevance of the 'Erdkinder' Vision" (Davis); (14) "Maria Montessori Envisioned Physics as Part of the Environment" (Gebhardt-Seele); (15) "Montessori Research: Recent Trends" (Boehnlein); (16) "Children at Risk" (Richardson); (17) "The Child in the Family" (Fernando); (18) "Working with Your Assistant" (Helfrich); (19) "Montessori in the 21st Century" (Lillard); and (20) "Classroom Management--The Path to Normalization" (Pritzker). (EV)

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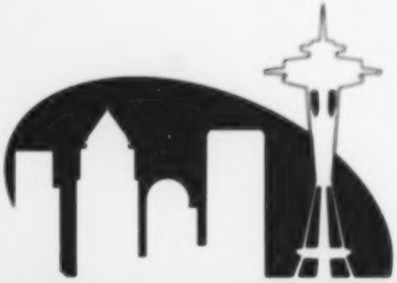
The Relevance of MONTESSORI *Today*

Meeting Human Needs



Principles to Practice

July 25-28, 1996

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The Relevance of Montessori Today

Meeting Human Needs

Principles to Practice

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Conference Schedule

Thursday, July 25, 1996

7:00 p.m. - 8:30 p.m. *The Dawning of Wisdom*
Renilde Montessori

Friday, July 26, 1996

9:00 a.m. - 10:15 a.m. *The Support of Montessori Education to Human Potential*
Silvana Q. Montanaro, M.D.

10:45 a.m. - 12:00 noon **Seminar Sessions**

- *Healthy Environment: Healthy Children: Healthy Culture,* Judi Orion
- *Classroom Management in a Primary Class – Pathway to Normalization,* Sue Pritzker
- *Cosmic Education vs. the Public School Curriculum – Are the Two at Variance?,* Margaret E. Stephenson
- *Administrators' Responsibilities to Their Staff,** Frank Kulle
- *The Atrium: Silence, Simplicity, Movement, Symbol & Joy,* Linda Kaiel

2:00 p.m. - 3:15 p.m. **Seminar Sessions**

- *Family Star – A Montessori Grassroots Early Headstart Initiative,* Martha Urioste, Ph.D.
- *We of Little Faith – The Unfolding of Mathematics,** Renilde Montessori & Monte Kenison
- *Beyond the Basic Needs: Nurturing the Full Potential of the Upper Elementary Child,* Johnnie Denton
- *Building the Elementary Program and Transitional Program Strategies,* Peter Davidson
- *Practical Life for Parents,* M. Shannon Helfrich

3:45 p.m. - 5:00 p.m. **Seminar Sessions**

- *Healthy Environment: Healthy Children: Healthy Culture,* Judi Orion
- *Classroom Management in a Primary Class – Pathway to Normalization,* Sue Pritzker
- *An Approach to the Resolution of Conflicts in a Positive Way,* Silvia C. Dubovoy, Ph.D.
- *Urban Issues Facing Administrators,** Alcillia Clifford-Williams
- *Talking with Parents: Conferences and Communications,* Carla Caudill

Saturday, July 27, 1996

9:00 a.m. - 10:30 a.m. *Dr. Maria Montessori – A Contemporary Educator?*
Margaret E. Stephenson

10:45 a.m. - 12:00 noon **Seminar Sessions**

- *The Relevance of the Erdkinder Vision,* Linda Davis
- *Maria Montessori Envisioned Physics as Part of the Environment,* Peter Gebhardt-Seele, Ph.D.
- *Research: Objective Assessment of Montessori Implementation,* Mary Boehnlein, Ph.D.
- *Multicultural Offerings for the Classroom,** Marcellina Otii
- *Building the Elementary Program and Transitional Program Strategies,* Peter Davidson

Sunday, July 28, 1996

10:00 - 12:00 noon	*Children at Risk* Sylvia O. Richardson, M.D.
2:00 p.m. - 3:15 p.m.	**Seminar Sessions** ◆ *The Relevance of the Erdkinder Vision,* Linda Davis ◆ *What We Have Learned About the Neuroanatomy and Neurophysiology of Language Development and How Montessori Assists the Linguistically At-Risk Child,** Sylvia O. Richardson, M.D. ◆ *Multicultural Offerings for the Classroom,* Marcellina Otii ◆ *Research: Objective Assessment of Montessori Implementation,* Mary Boehnlein, Ph.D. ◆ *The Child in the Family,* Chulie Fernando
3:45 p.m. - 5:00 p.m.	**Seminar Sessions** ◆ *The Cognizant Parent,** Silvana Q. Montanaro, M.D. ◆ *Working With Your Assistant,* M. Shannon Helfrich ◆ *Beyond the Basic Needs: Nurturing the Full Potential of the Upper Elementary Child,* Johnnie Denton ◆ *Making Your Voice Heard,** Frank Kulle ◆ *Working with Urban Parents Through Workshops and Conferences,** Alcillia Clifford-Williams
7:30 p.m. -9:30 p.m.	**Banquet Address** *Montessori in the 21st Century,* Paula Polk Lillard

* *Not available for this printing.*

The Dawning of Wisdom

Renilde Montessori

We have a theme: *The Relevance of Montessori Today*. The fact whether Montessori principles and practices are relevant at this time, is not in question. Unless we all believed this to be so, we would not be here. What is more, if we were not absolutely convinced that Montessori pedagogy will become increasingly relevant far into the future, it would be futile to discuss the subject at all. The importance of this gathering and of the many more that will follow, in the coming years, is to confirm and anchor our convictions – to find a way together whereby, when called upon to do so, we can respond, firmly and usefully on behalf of the children

This requires a measure of wisdom. It is difficult to achieve wisdom in a time when as a human quality it is not greatly sought after, nor valued. In fact, it might well be placed on the endangered list. We far prefer knowledge – facts – bits of information, to wisdom.

Knowledge is nice. It is an immediate, chunky word, useful, matter of fact, a burlap sack filled with firewood, and, like firewood, to be burned and so provide ashes from which the phoenix of wisdom may emerge, and rise, and soar, into the farthest reaches of the human spirit.

Wisdom is a lovely, peaceful word. It flows in calm and stately rhythm, unperturbed, from ancient times into our own and our spirit reaches out to see it off into the haze of unknown futures. It is also a lovely, peaceful human condition and the relevance of Montessori is dependent on its attainment.

We live in times of wizardry – wizardry of many types. Magic of myriad forms and colors – elusive, amazing, disconcerting – is perpetrated by wizards, witches and warlocks. There is, however, a dearth of spirits and without spirits wizardry is hilarious, but not exhilarating. Hilarity is horizontal – exhilaration takes us up and beyond to the realm of spirits. Alas, the spirits have fled to the secret place where they withdraw, when we no longer look up and beyond to the wild skies, fleeting clouds, sudden brilliant light and deepest dark; when we no longer allow ourselves to be delighted by gleaming shafts of rain, enchanted by soft mists and comforted by rainbows assuring us that our covenant with life is persistent and eternal.

In *The Sibling Society*, Robert Bly has a chilling description of the horizontal society. "We begin to live a lateral life, catch glimpses out of the corners of our eyes, keep the TV set at eye level, watch the scores move horizontally across the screen. We see what's coming out of the sideview mirror. It seems like intimacy; maybe not intimacy as much as proximity; maybe not proximity as much as sameness. When we see the millions like ourselves all over the world, our eyes meet uniformity, resemblance, likenesses, rather than distinction and differences. Hope rises immediately for the long-desired possibility of community. And yet it would be foolish to overlook the serious implications of this glance to the side, this tilt of the head. 'Mass society, with its demand for work without responsibility, creates a gigantic army of rival siblings,' in Alexander Mitscherlich's words. Adults regress toward adolescence; and adolescents – seeing that – have no desire to become adults. Few are able to imagine any genuine life coming from the vertical place – tradition, religion, devotion."

So, how do we achieve wisdom?

Here is a random selection – random because we believe, with Ralph Waldo Emerson that "A foolish consistency is the hobgoblin of little minds..."

One of our convictions is that we must reinstate the vertical plane.

In the same way that in our schools we need a three year age mix where the older children become wise in the matters of their small cosmos, in adult society we need the three generations – the children, the parents, and the grandparents become wise and accepting in the matters of life. We also need all the history of our past generations – their art, literature and music, their power and their glory, their miseries and errors – for these are the givens of who we are. Most important is becoming adequate to contemplate the distilled wisdom of our ancestors, for how else can we become decent and respectable ancestors ourselves?

Then, the road to wisdom demands a high degree of objectivity.

We learn by observing, and by doing. Unless, when we observe, we are capable os standing outside ourselves, wisdom will elude us. When we observe, we take in the whole, then details in turn, then return to the whole. We must learn to look upon ourselves in perspective, from a distance and see where we fit in the context of a unified whole, like children who send letters to the person, the street, the city, the province, the country, the continent, the planetary system, the galaxy, the universe.

It is convenient to see ourselves as part of a species that has particular characteristics and to realize that in the children these characteristics are all present, unadulterated, unsullied, pristine. It is also sage to divorce ourselves from personalities as central to our pursuits, to cease to let our feelings guide us and instead to use our specifically human capacity for abstract thought; to think, to reason, to go beyond the immediate and function in the realm of principles, ideas and ideals.

"We ought to strive for the supreme result of producing men who will be happy; always keeping clearly before us the idea that the happy man is the one who may be spared the effort of thinking himself, and dedicate all his energies, to the unlimited progress of human society. The preoccupation of virtue, the voluntary sacrifice are in any case forces turned back upon themselves, that expend upon the individual energies that are lost to the world at large; nevertheless, such standards of virtue are necessary for certain inferior types." (Maria Montessori - *Pedagogical Anthropology*)

We must learn to see ourselves as intelligent beings.

In one of his books Colin Turnbull speaks of the lullaby sung towards the end of her pregnancy by the young Pygmy mother to her unborn child. She wanders off to her favorite place in the forest, perhaps near a stream; and as she sits in pleasant shade, quietly splashing fresh water over her round and comely belly, she sings a song created for this child only, and none other. In this song she tells the baby what awaits it. If she be a girl, she will do this in her life – if he be a boy, he will do that in his. The beauty of this monologue is that she speaks to it as to an intelligent being – without experience, without knowledge, yet intelligent.

Unless we see ourselves and accept ourselves, joyfully, as infinitesimal, infinitely important, highly intelligent bits in the grand pageant of life, we shall be like small monkeys clinging to the top of an empty flagpole. What a waste of our incredible, as yet unfulfilled potential.

"You are the culmination of an extravagant evolutionary journey. Your DNA contains more information than all of the libraries in the world; information that goes back to the beginnings of life itself. Your brain is the most complex entity in the known universe. Its billions of twinkling neurons interact in ways so multitudinous and multifarious as to dwarf the capacity of any computer ever yet devised or even imagined. The best way to describe your total creative capacity is to say that for all practical purposes it is infinite.

"Whatever your age, your upbringing, or your education, what you are made of is mostly unused potential. It is your evolutionary destiny to use what is unused, to learn and keep on learning for as long as you live."

Indeed, it is wise to remember that first and foremost and above all, the ultimate, salient characteristic of mankind is its fundamental need to learn, and to go on learning, throughout life, throughout time.

"...from that moment I was totally committed to thinking about what makes man what he is ... How did the hominids come to be the kind of man that I honor: dexterous, observant, thoughtful, passionate, able to manipulate in the mind the symbols of language and mathematics both, the visions of art and geometry and poetry and science? How did the ascent of man take him from those animal beginnings to that rising enquiry into the workings of nature, that rage for knowledge of which these essays are one expression?" (Bronowski - *The Ascent of Man*)

"The human individual is equipped to learn and go on learning prodigiously from birth to death, and this is precisely what sets him or her apart from all other known forms of life. Man has at various times been defined as a building animal, a working animal, and a fighting animal, but all of these definitions are incomplete and finally false. Man is a learning animal, and the essence of the species is encoded in that simple term." (George Leonard - *Mastery*)

Let us return for a moment to our theme. Is Montessori relevant today? If, perchance, we wish to recapture the pursuit of wisdom then, yes, Montessori is relevant today, if only because in the sane ecology of the *Casa dei Bambini* all elements are in place to allow the children's innate wisdom to flourish and become an ineradicable construct of their personality.

There is observation – the child is the ultimate master of observation. In the child observation is a vital pursuit, the fundamental ingredient of his self-construction, the means whereby he initiates the cycle of thought, will and action necessary for the harmonious growth of his body, mind and spirit. In the *Casa dei Bambini* the habit of observation is encouraged, it is acknowledged as an exigency as essential as breathing.

There is responsibility. From the time the child enters the *Casa* he is given the freedom and discipline which lead to responsibility, and the opportunity to assume responsibility for himself, for others and for the environment.

In a trustworthy environment, as the child develops his will, joyful obedience, the cornerstone of an interdependent society, develops apace; it burgeons and comes to full bloom.

Practical Life, Sensorial, Language and Math, if well understood and appropriately presented, give keys for awareness of our entire universe and of our human condition; of nature and supranature.

The child's deeply rooted urge to work is encouraged, channeled and allowed to thrive; and if a child is given a sense of endless time, if there is not a demand for product, if each child's pace and rhythm is respected, the process of completing any task undertaken, of acquiring any ability, becomes a voyage of delight and discovery.

Knowledge of oneself, acceptance of oneself and of others are implicit in a cohesive social unit where each individual functions independently, where mistakes are an affluent of interest rather than a source of guilt, where all work in concert for the common good.

Rage for knowledge – Bronowski's marvelously apt term – one of the most powerful passions of childhood – Maria Montessori's equally marvelous expression – is seen, admitted and encouraged; exploration and adventuresomeness of the mind are celebrated, the spirit is prepared for soaring, the heart for singing.

There is depth and breadth and height to the children's experience; horizontality, verticality, and multidimensionality.

Is Montessori relevant? Indeed, yes. Only now is its relevance beginning to dawn because where there should be wisdom there are deserts encroaching where nothing will flourish, nothing will grow, nothing will live and the human spirit, the magnificent, exhilarated, adventurous, tender spirit of our species, will shrivel and die. When passions become corrupt and foul we cannot last. Our planet's inhabitants are beginning to realize this and perhaps timidly, cautiously seek wisdom anew.

We need not seek very far – it is achingly simple. In recreating the vertical society, we may look for wisdom to the young child and the elders.

There is a magic hour before sunrise and again after sunset when light is pure and casts no shadows.

There is a time at the beginning of life when experience is pure and free of contrasts – the magic light of early dawn – and at the end, if life has been lived and the cycle is complete, it becomes again pure and free of contrasts, limpid as the magic light of approaching dusk. In the beginning there are no memories to haunt us – in the end our ancient memories no longer cast haunting shadows; they become clean and clear and create a landscape exquisitely alive with the pain and delight of all our days and all our nights.

Wisdom will dawn when we allow ourselves to learn from those who live in the magic light – the very young, and the very old. ◆

Renilde Montessori de Matute is Maria Montessori's youngest grandchild. She lived and traveled with her grandmother as a child, and in her late teens audited one of Dr. Montessori's courses. She attended Montessori schools whenever these were available and finished her secondary studies in the Montessori Lyceum of Amsterdam. Renilde Montessori married, had two sons, and worked for many years in varied fields of endeavor. In 1968 she joined the Montessori movement, first as personal assistant to her father, Mario Montessori. She obtained her primary Montessori diploma from the Washington Montessori Institute in 1971 and has since then been dedicated to Montessori education as lecturer, trainer and AMI examiner. From 1989 to 1995 she was Director of Training at the Foundation for Montessori Education in Toronto. In September of 1995, she became the General Secretary of the Association Montessori Internationale (AMI).

The Support of Montessori Education to Human Potential

Silvana Quattrocchi Montanaro, M.D.

Relevance, as I have learned through a consultation with the Webster dictionary, means "the state or quality of being important, pertinent". We wish to apply this concept to Montessori education so we are here to ask ourselves if her lifetime work is still important today, how this work meets the human needs and how its principles have been translated into practice. It is a challenging conference because each of us, in our everyday work, certainly has (and will continue to have) moments of inner reflection during which the validity of our work is reconsidered.

As my first answer I chose a title for this paper which is an affirmation: *The Montessori education gives support to the human potential!* I would like also to affirm from the very beginning that, at present, we do not know of any other "method"[1] capable of supporting so well the human potential all along its development from birth (and even before birth) through maturity.

But an affirmation such as this can sound like an "act of faith" and it is true that I have this faith but it is not a blind one, so it is necessary to explain why I have it and where this faith comes from.

Montessori is alive today while other educators are only remembered.

Iohann Heinrich Pestalozzi started his work at the end of the eighteenth century, in the time of the Enlightenment which brought a new vision of human life in the intellectual, political and social aspects. This vision also involved pedagogy. He was thinking of what we call today "integral development" underlining the necessity of educating simultaneously the head (intellect), the hand (practical work) and the heart (emotions). He recognized also the great importance of the mother during the first years.

In 1837 Friedrich Wilhelm August Froebel started a kindergarten where children, through playing, could express their creative activity.

Both these men had wonderful ideas and tried to start a new path in education. They saw the gold in the child but did not know how to get it out. They saw education as a process of humanization that must be in harmony with the laws of life in order to make it possible to have a better humanity. Certainly, in their schools, children have been much happier than before, but these schools were not offering a better development to the human potential. That is why, at that meeting, it was recognized that they were not alive today.

When Montessori arrived something new happened. She had a scientific preparation and did not think of becoming an educator. She wanted to cure physically and mentally sick children and in doing so she learned that the only therapy was the use of a scientific pedagogy.

Montessori wanted to be a doctor and became an educator under special circumstances. Looking at her life we can distinguish two very different periods.

The first one, running from 1896 (when, on the 10th of July, she obtained her medical degree) to 1907. These were ten years of hard professional work and intense study. She studied anthropology, philosophy and natural sciences while, at the same time, she was directly working with mentally sick children and preparing teachers for them.[2] About this activity Montessori talks in *The Discovery of the Child*: "I was present and taught the children directly from 8:00 am to 7:00 pm without interruption. These years of practice are my first and true title in pedagogy!"[3]

During her work with these children Montessori understood that the solution to their problems was not a medical but a pedagogical one. So she wanted to study the physiological methods of Itard and Seguin and, following their experiences, prepared many materials. The good results of her teaching made immediately evident that better educational strategies could help other children even more. Of course, a new teacher was also necessary, a teacher with great scientific interest and preparation, the spirit of sacrifice of the true scientist plus a spiritual disposition. This was her role all through the many years she spent with sick children. But such a teacher must operate in a different environment where children, free from immobility, silence and rewards, and with appropriate materials could manifest themselves.

Education as a great transforming force for humanity is clearly stated in *The Discovery of the Child*.

The second period of Montessori's life is from 1907 to 1952. It is the period that starts with the first *Casa dei Bambini* where the methods and materials she had studied and tested could, eventually, be used with normal children.

This *Casa* "is a two year experiment which represents the work of three doctors ... This work started at the time of the French Revolution and sums up my ten years study to the 40 years of Itard and Seguin."[4]

The *Casa*, whose initial goal was just to assist poor children, became a laboratory of scientific pedagogy where the children's characteristics appeared and the secret of childhood was revealed. These important discoveries oriented Montessori's work in the field of education for the rest of her life. She became the defender of the children's human potential and of their right to develop freely in a prepared environment.

The first book is *The Method of Scientific Pedagogy*, written in 1909, following the two year experiment and intense personal work in the *Casa*. From this first book the theory and practice go hand in hand and support each other. The "educational truth about the child was awaited and desired from all humanity, parents and teachers."[5]

It is important to notice the part of the title which says "applied to the Children's House" because such a scientific pedagogy can work only in a scientifically prepared environment where there is freedom for choosing the activity, time to repeat it and the possibility of personal control of error. This special school shows the strict relationship between body and mind: also the children's health improved as if they had received better food or had been exposed to good air and sunshine!

Until psychology and pedagogy studied the repressed child, nothing could appear and it was useless to try to change the bench or the blackboard! The Montessori scientific pedagogy looks at the problems and solves them in order to remove the obstacles of the environment that are responsible for the deviations in the human being. It is a transforming science!

"There are two psychic personalities in the child: one that is natural and creative, therefore normal and superior, and one that is forced and inferior, resulting in a battle in which the weak are attacked by the strong. A new image of the child has emerged from this discovery, which has been a beam of light to guide us on the road of a new education. The child demonstrates, along with his innocence, courage and faith in himself, and is endowed with a moral force that also has a social direction. At the same time, those defects that one struggled in vain to discourage with education – that is misbehavior, destructiveness, lying, shyness, fear and, in general, all those that are contingent upon the posture of defense – have disappeared."[6]

"...you cannot develop by repression. Unluckily logic does not function in people who suffer from illusions, so these teachers enter the school and begin to carry out their contradictions. They do the easiest thing – repress, command, destroy! Destruction is easily and quickly done, whether the structure is simple or complex; anyone can do it! But how difficult it is to construct."[7] The repression of the adult on the child is responsible for the wrong in our life. We must always go back to infancy in order to find the roots of human deviations.

In 1916 we have the *Self-education in Elementary School* (editors note: *Advanced Method, Vol. I and II* in English). This book is the demonstration that the principles discovered in the *Casa dei Bambini*, (natural interest in learning, polarization of attention, desire of repetition in the work, possibility of self-discipline) can be applied and can continue in the second plane of development. The teacher as a scientist needs an interior change and a special preparation.

The Child in the Family was first published in 1923 (Germany). The principles discovered in the *Casa* must be applied in the home. The physical hygiene is very important and can save the body but the Montessori education saves the mind. The principles given to parents in this book are cornerstones in the protection and support of the human potential since birth.

"The most important is: to respect any kind of the children's reasonable activity and try to understand it. The second one is: to follow as much as possible the children's desire of activity; not to serve them but to educate to independence. The third one is: to be very careful in our relationship with children because they are very sensitive to the external influences."[8]

The conflict between children and adults starts at the very beginning of life and it is due to the lack of knowledge of the child's true nature. There has been a philosophical and religious view of infancy but not a scientific one until Montessori.

Between 1932 and 1939 Montessori talks in different places against war and her lectures are published in the book *Education and Peace*. Her vision of the problem is universal – from the school (*Casa dei Bambini* and elementary) to the family (*Child in the Family*) to the universe – there will be no peace in our world without children's "normalization!"

Human beings, with great effort, have produced the civilization, the "supernature" and have reached a level superior to biology. We have reached the "plateau" but we are now afraid of the place where we are and we feel incapable of controlling our technology. A type of education is needed that can develop sufficient human potential so that we can "enter a third dimension." "... A new world for a new human being this is what is necessary ... This is a century of miracles ... we are proceeding towards a higher level ... the new children are destined to the conquer of the infinite."[9]

"The peace (that, with the economical justice, is in this moment one of our greatest problems) needs two things: a new human being, a better human being; then an environment without limits in front of the infinite human desire."[10]

Montessori's idea of a global nation (today we talk of a global village and of a global brain) provides us with a cosmic, peaceful horizon in which a development according to the laws of life becomes possible. This is not a visionary idea because the possibility of peace and collaboration of human beings has been proved possible in the *Casa dei Bambini*.

In 1936 we have *The Secret of Childhood*, a very special book of evolutive and educational psychology. "In these chapters we find the scientific, philosophical, political and religious soul of Montessori (a four-leafed clover). Teachers should read a chapter each day like a *breviario*!"[11]

In 1939 *From Childhood to Adolescence* was published.

The Montessori educational project does not stop with elementary school but is completed with the third plane of development. It is important to emphasize that when she writes this book she is almost 70! The great points of the book are that the school of this period must be ***for all and must not yet push to a profession.*** Its goal is the ***formation of the person.*** This school must provide the broadest frame of reference in which to live the human life. Only later will it be decided what to choose as a job. Montessori calls this education "dilatatrice" in *The Formation of Man*.

Only when the human beings have incarnated such a cosmic vision in their life will it be possible to reach the freedom, equality and brotherhood that are the aspirations of humanity and the guidelines of life itself. If education takes care of the different types of minds at work in the different planes of development, we can see the absorbent mind take in the environment, the mind with imagination and abstraction take in the macrocosm and the constructive *erdkinder* mind capable of dealing with all sciences and history and of putting them together. In this way we can find our right place in the universal environment.

In 1948, Montessori revised the 1909 book and gave it the new title *The Discovery of the Child*. Here are her 40 years of scientific education, during which the principles have been tested in any type of environment, producing always the same responses in the children. "The child discovered by Montessori proved to be active, competent and capable of educating himself in an appropriate environment."

In 1948 *To Educate the Human Potential* is also published; "human beings must become capable and willing to bring further the life's project."

In 1949, *The Absorbent Mind*. There is a "cohesive society" where each human being is necessary. There is interdependency of everything and everyone. (We talk no more now of a pyramid but of a net where each knot is equally indispensable!)

We have to consider the special places of humans in evolution. Their necessity of a special time after birth for completing the development started during the internal pregnancy. This additional time is crucial for acquiring the character of our species and for becoming able to successfully confront the challenges of the environment. Experience must be passed, it is necessary to learn how to respond appropriately. In order to do so it is necessary to understand the meaning of what happens in the environment. And any time we need to learn it is important to have a teacher, a facilitator who will save us time allowing to progress rapidly because we have a very short period to live. The possibility for learning is intrinsic to the subject but without the help of the environment the human potential cannot unfold.

The human potential can now be quantified with the help of neurophysiology – the enormous amount of cells of our nervous systems. These neurons are in the billions and each of us brings this richness into the world at birth. Montessori calls it "human great inner powers".

At the beginning of the fully revised Italian version of *The Absorbent Mind* it is said: "This book is one of the links in the unfolding chain of our thought, and to the movement to which we belong, for the defense of those great inner powers which children possess." Those powers and their "peculiar psychic nature ... points out a new path to the educator... The child's true constructive energy, a dynamic power, has remained unnoticed for thousands of years... From the earliest dawn of man's life on earth, these energies have been repressed and nullified... Today we are beginning to see the value of these ungathered fruits, more precious than gold, for they are man's own spirit. The first two years of life open new horizons before us for here we may see the laws of psychic construction hitherto unknown. It is the child himself who presents us with these revelations... By the age of three the child has already laid down the foundations of his personality as a human being ... at three a child is already a man."[12]

The unfolding of the human potential is the process of humanization. "...a natural process which develops spontaneously in the human being ... it is acquired in virtues of experiences in the environment ... individual activity is the one factor that stimulates and produces development and this is not more true for the little ones of preschool age than it is for the junior, middle, and upper school children."[13]

So it is the relationship of the human potential with the environment and the type of environment that will make the difference. The quality and quantity of the process of humanization (equal to what we can get out and use in a human way) is linked to the special environment that only adults who possess a ***love for life and knowledge of life*** can prepare.

The last book of Montessori is, also in 1949, *The Formation of Man*. In it Montessori talks about the prejudices towards children and the social powers – family and society – that impede human development.

The OMBIUS[14] is the omnipresent organization which destroys children's human potential in the name of good. Open violence against children is evident now at any level and in every country. Children are still the forgotten citizens because they lack political power but Montessori was hoping that parents, who have this power, could eventually group together in their defense.

In the International Congress in San Remo, also in 1949, entitled, *The Importance of the Child in the Reconstruction of the World*, Montessori gives wonderful lectures while at the same time, complaining that *"Non hanno capito niente!* (They have understood nothing!)"

Her discoveries have been refused and criticized by the scientific world and by other great contemporary educators both in the USA and in Europe (Kilpatrick, Dewey, Claparede, Decroly, etc.). Her vision produced too great a shift in education putting all the importance on the child with the adult as the humble servant of life. Montessori was not only rejecting current education, but she was showing how to change it starting from the knowledge of the child. She always went from principles to practice.

And at the end of *The Absorbent Mind*'s first chapter Montessori gives us the hopeful vision of the child "guided by his inward teacher, who

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labors indefatigably in joy and happiness – following a precise timetable – at the work of constructing that greatest marvel of the Universe, the human being ... able to direct and mold the future of mankind."[15]

This vision is based on the knowledge of the laws of life that "cannot be ignored. We must act in conformity with them, for they proclaim *the rights of man* which are universal and common to all."

The discovery of the laws of life are followed by practical solutions for any plan of development. Montessori devoted all the second period of her life to this task. These discoveries and these solutions are what gives the greatest relevance to Montessori education today and in the future. Following the laws of life in children's development we can support the human potential. "Man himself becomes the center of education and we must never forget that ... his mental growth begins at birth and pursues it with greatest intensity during the first three years of life."[16]

Following these laws the "education of the newly born becomes suddenly of the first importance" and we discover how much can be done for children from the very beginning. Adele Costa Gnocchi, who did the first 3-6 course in 1909 with the help of Montessori's suggestions, started the school for Assistants to Infancy. In doing so she gave an answer to the preoccupations of Montessori about the first years of life and provided "suggestions for making practical provisions for this."[17] Also, a training for parenthood, that Montessori held to be necessary, started.

The human potential must be defended, and this is what Montessori did all her life, "proclaiming a revolution ... the final revolution" for a new education.

"This education, understood as help to life; an education from birth (and before) feeds a peaceful revolution and unites all in a common aim ... mothers, fathers, politicians ... help the delicate work of formation which the child carries on in the depth of a profound psychological mystery ... a work of formation which brings out the immense potentialities with which children, the sons (and the fathers) of men, are endowed."[18]

In the book written by Prof. Scocchera, an Italian Montessori scholar, it is said: "the liberation of children is not just a pedagogical or political problem because it supposes the psychological change of the adults. Their desire of dominion on children has not only external and historical causes, it is in their hearts forever. The conflict cannot be solved through the struggles necessary for the economical and social transformations; the solution of this conflict depends from the adults who must recognize the millenary error towards the children... Only with a change of the mental attitude we will be able to recognize the *psychic child*."[19]

I continue to wonder at all the knowledge we have put together during this century. It seems that humanity needed a good boost in order to enter the third millennium better equipped, with a better and wider understanding about ourselves, our planet and the universe but, especially, about what should be our participation in the project of life.

At the end of a century with astonishing technological changes which put in our hands a lot of power, we are called to follow this global transformation for directing it in the good way. This turning point requires human beings capable of understanding and performing their cosmic mission. This can be achieved with the education Montessori offered to humanity.

She has been so much ahead of her time and still is. We have not yet recognized her principles and have not yet put them fully into practice. In this special century of the human history Montessori stands as one of the most relevant persons. Her method of self-education offers to the children the possibility of using their potential without the destructive repression that has endangered humanity for such a long time.

Montessori's universal vision, principles and practice are still ahead of time. They offer a global education that supports our evolution during all the planes of development. It is up to us, the Montessorians who witness every day the good results of such education, to continue to bring the benefit of her long work to all children for the support of the human potential now and in the future because "Nothing can be achieved in the adult's world if we do not operate first in the child's one."[20]

"The first years of life are the most important ones." Childhood is the most precious time of our development. From Montessori we have received all the theoretical and practical guidelines that can enable us to transform every home, Infant Community and *Casa dei Bambini* into environments that are an "aid to life". The lifework of Montessori has given light to the education of this century and will continue to be a lighthouse for mankind in the future.

Next January it will be 90 years since the San Lorenzo *Casa dei Bambini* started and the opportunity given to Montessori to verify her observations. We can all benefit from her discoveries.

Nothing new has been said here but we have tried to review together the foundation of our work. I can say to you and with you, that Montessori is relevant today even more than before and it is for humanity the only hope of a better future. Montessori is a woman whose relevance in science, pedagogy, political and social fields is still to be fully understood and recognized. ◆

NOTES

[1] It is true that the word *method* should not be used because Montessori herself, in the preface of *The Discovery of the Child*, says that "her work is more the result than the creation of a new educational method." Also in *The Formation of Man* it is said that the word method should be substituted with "help to the conquest of human personality's independence, a means for liberating it from oppression and old prejudices on education. It is the defense of the child, the scientific recognition of his nature, the proclamation of his rights..." (p. 11-12). "To help the life, this is the fundamental principle." (p. 24)

[2] She was also very active in the social problems: the 20th of September of this year will be one hundred years of her participation, as Italian representative, in the Berlin's Congress for the political and social rights

of women. There were 500 participants and Montessori had a great personal success.

[3] M. Montessori, *The Discovery of the Child*. Chapter II.

[4] M. Montessori, *The Method of Scientific Pedagogy*.

[5] Many thanks to Prof. A. Scocchera for the inspiring vision of Montessori's life and work. Workshop in Rome, December, 1994.

[6] M. Montessori, *The Child in the Family*. Avon Books, p. 152-3.

[7] M. Montessori, *How to Educate the Human Potential*.

[8] M. Montessori, *The Child in the Family*.

[9] M. Montessori, *How to Educate the Human Potential*.

[10] A. Scocchera, Rome, December, 1994 workshop.

[11] A. Scocchera, ibidem.

[12] M. Montessori, *The Absorbent Mind*. Delta, New York, 1967, p. 3-7.

[13] Ibidem, p. 8.

[14] M. Montessori, *The Formation of Man*.

[15] M. Montessori, *The Absorbent Mind*, p. 12.

[16] Ibidem, p. 8.

[17] Ibidem, p. 12.

[18] Ibidem, p. 17.

[19] A. Scocchera, *Maria Montessori*. La Nuova Italia, Firenze, 1990.

[20] M. Montessori, *Education and Peace*.

Silvana Q. Montanaro, M.D., gained her degree in Medicine and Surgery, with a specialty in Psychiatry, from the University of Rome. In 1955 she joined the staff of the Rome Montessori School for Assistants to Infancy, where she taught mental hygiene, child neuropsychiatry, nutrition and obstetrics. Dr. Montanaro cofounded the Italian Medical Institute for the Study of Relaxation's Phenomena and States of Consciousness. She serves as a trainer in Respiratory Autogenic Training (R.A.T.) and works in clinics and hospitals to prepare couples to nurture children under the age of three. Dr. Montanaro is currently the Director of Training for the Assistants to Infancy course in Rome and serves on the board of directors of AMI. She has also been the Director of Training for the AMI Assistants to Infancy courses in London and Mexico City, and was responsible for bringing this toddler training to the United States, first in Houston, Texas and then in Denver, Colorado.

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Healthy Environments, Healthy Children, Healthy Culture

Judi Orion

As Dr. Montanaro mentioned in her keynote this morning, we are in a crisis on this planet; we see many behavioral characteristics that are unpleasant, difficult to live with. We must remember the advice given by Dr. Maria Montessori years ago, that if we really want to make changes in our society, we must begin with the youngest members.

In Montessori education we put enormous effort and priority into creating a beautiful environment for children; we study which materials are appropriate for which stage of development and those materials are included in the environment. Creating a beautiful environment is one of the gifts of Montessori educators to the field of education.

But a beautiful environment is only the first step.

I'd like to focus this presentation on the role of the adult – more specifically the preparation of the adult. For anyone working with children under the age of three it is imperative to understand that the adult plays a critical role in the child's psychological development. Without a strong psychological base, the child's use of a beautifully prepared environment will be compromised. So we come to understand that ***how*** we approach children and use the environment is more important than ***what*** we do with the environment.

Following World War II Adele Costa Gnocchi, in collaboration with Dr. Montessori, created environments for children under three years of age and then began the process of creating a training course for adults to work with these children. This work began in 1947.

From the beginning, Costa Gnocchi insisted that adults planning to work with such young children must undergo two types of training – professional and personal/spiritual.

In speaking of professional development, Costa Gnocchi outlined the following steps in one's professional training:

- To study and attain a very deep knowledge of the developmental stages of childhood.
- To develop the ability to recognize those stages in children.
- To study and come to a profound understanding of the purpose of all the equipment in the environment.
- To learn how to transform any "mistake" into a learning opportunity.
- To learn to speak in a soft, calm, clearly articulated voice.
- To cultivate the ability to look at any sequence of movements and analyze those movements into a series of steps.
- To be willing to step back and let the child work by him or herself. To respect the child's plea of "help me to do it myself."
- To develop observation skills.
- To respect, in all circumstances, the educational rules established for the community.

Let's examine these aspects of training and consider practical implications in our work with children.

- Studying the developmental stages of childhood occurs in our Montessori training course. Some students arrive to Montessori with other experience in early childhood education that have also prepared them with this knowledge.
- Recognizing the stages of development in children is something that comes with experience but comes relatively easily with children under three whose developmental changes occur so dramatically.
- Studying and understanding the purpose of the materials also comes with Montessori training but continues in our work with children.
- Transforming mistakes into learning opportunities requires observational skills, experience, trust in children and belief in our approach to children.
- Analyzing movements requires first of all the understanding of why this is important. Once the importance of this is accepted, the ability to analyze movements comes fairly easily. Once a series of movements are analyzed, they must be practiced so the sequence appears to a child as a fluid dance of actions, not stilted "step-pause-step" movements.
- Respecting the child's appeal to "help me to do it myself." For some of us this requires an extremely deep level of trust and belief in a child's abilities. Sometimes it even requires sitting on one's hands to prevent ourselves from interfering! It also requires understanding how to create an environment that children can use, down to the smallest detail. If an environment works against a child, then no child will be able to function independently, to help himself.
- To develop observational skills. The distinction between "what I see" and "what I feel about what I see" begins in the observation training aspect of the Montessori course. To be an objective observer is not an innate skill; it is a skill that requires lots of practice and commitment. It requires being willing to listen to one's judgments about others. It requires being humble.
- Respect of educational rules. What kind of rules could we have for a group of children under three years? "Here we sit to eat." "We don't bite people." "We run outside." "When you take work from a shelf, it is your work until you return it to the shelf." Very simple rules consistently but gently enforced allow children to arrive at a point of trusting that these rules can be relied on.

The professional training in preparation for working with children under three is the easiest aspect of our work; some of it is accomplished easily in Montessori training. Other aspects of professional training are ongoing but are not difficult; they just require the passage of time and the accumulation of and reflection on experience.

The spiritual or personal preparation that one undergoes is more challenging for most people. It requires reflection. It requires the willingness to know ourselves. It requires accepting our faults as well as our strengths. It requires a willingness to put judgment aside. It requires introspection. It requires developing incredible humility.

Costa Gnocchi outlined three simple requirements:

- ***To trust that every child is a carrier of great human potential.***

In speaking of children having great potential requires that each and every day we look at each child as a new human being; that we forget the trials of the previous day, reserve judgment about what a child will or will not do and look forward to the glimpse of another facet of each child's potential.

- ***To have a deep respect for each child as a unique individual.***

Treating children as unique individuals is sometimes a challenge. We speak of "our children", "the children under two", the "threes", etc. We tend to mentally group children and categorize them by age, ability, sex, behavior, etc. We must train ourselves to see each child individually, treat them as individuals and accept their individual characteristics and gifts to humanity.

- ***To be a servant to life unfolding.***

To be a servant to life unfolding requires untold humility. It requires that daily we acknowledge that each child "knows" what is needed for his/her own development. It requires to trust each child and follow their unfolding. It does not mean not being willing to set limits, not correct behaviors.

There are two quotes from Dr. Montessori I would like to share. The first one reads, "The preparation of the environment, and of the things (objects in the environment) is the first external act of a deeper transformation which consists in leaving the child free to act according to his natural tendencies."

The second reads, "The first aim of the prepared environment is, as far as possible, to render the growing child independent of the adult. That is, it is a place where he can do things for himself, live his own life, without the immediate help of adults."

When training to work with 3-6 year olds, it is much easier to think of preparing an environment in which the children can be free to develop, to pursue their own developmental needs without constant "helpful" interference from adults. When trying to apply this information to children under three it becomes even more of a challenge. At least three year olds can use language to create space around themselves whereas the toddler may not yet have language at his disposal.

What does it mean to "leave a toddler free" to develop? It certainly does not mean abandoning a toddler to her own devices. It does not mean allowing a toddler to function without limits; limits give structure, parameters in which to develop. We try to follow Montessori's advice of "following a child" but we are unclear about the meaning of this when applied to toddlers. A friend, familiar with the ways of toddlers, recommended following the soul of the toddler – that grounded, earthy, very wise aspect – but not necessarily the spirit of the toddler which is everywhere.

Perhaps the secret lies in understanding the developmental needs of the toddler, including the need for clear limits, knowing how to prepare a functioning environment for toddlers and coming to a deep level of trust in their abilities.

Let's take one practical situation and try to apply these ideas to a day-to-day situation. The situation is the transition from home to school – arrival at school.

Do we give the child as much time as she needs to make the transition? Do we allow the parent to quickly undress the child and deposit her into the classroom? Do we rush the child into an activity before the child is ready? Do we provide an area for this transition within view of the teacher after the parent has left?

Often we have our own agenda regarding the child's activity for the morning and therefore fail to take into consideration the child's need for time and space to make the transition. One way of honoring a toddler's needs is to accept that each child will make her transition the way she needs to if given the time and space to do so. By doing this we give the child the possibility of entering that calm, sacred place from which she can follow her intuited developmental needs within an appropriately prepared environment. This environment must have an adult who is herself healthy psychologically, who does not need to be needed by the children, who can give of herself as much ego support as each child needs to further their secure development.

When the adult can arrive to that calm, secure, unhurried place, then children can be given the time and space to allow their true nature to unfold. They develop into secure, adjusted, happy, healthy children. With children given this opportunity from the beginning, allowed to continue in their Montessori education, I think we have a good chance at seeing a change in the adults of the future. I think we will see adults who consider the needs of humankind, society, and their planet. I think we will have an opportunity to participate in great transformations. But the transformation must first begin with the adults who work with the children. ◆

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Cosmic Education vs. The Public School Curriculum - Are the Two at Variance?

Margaret E. Stephenson

The question of the title of this talk must obviously raise other questions. This was one of the reasons for the questioning title. I hope the questions raised will linger long in our minds, and as the summer draws to a close and the school year begins again, will cause us to reflect long and hard on what we are doing and why we are doing it.

You know better than I the public school curriculum in the United States. Probably the majority of you are its products. I am therefore not going to go into a detailed description of it. If traditional educators were asked what was the aim and purpose of their program in schools, they would doubtless answer that it was to send out people who were literate in the use of their own language in communication; who were numerate and could cope with figures and numerical transactions; who knew something about the natural environment in which they were living – that the earth had mountains and rivers upon it, and that their country had some of these and they knew their names and where they were located; that there were plants and trees and flowers and grasses clothing the earth and they knew some of these and their names; that the people of their country had a history and they knew some of the facts and the characters that had developed this history; that there had been other societies with a history before their own, some of them a long time ago, and some other societies with a contemporary history.

Some public school educators might add that they hoped to send out people with some knowledge of music, of arts and crafts, some with a knowledge of physics and chemistry, of mechanics and engineering. This may sound like a list. I would ask you – is this what it is? Are syllabi and curricula lists?

I would also ask you where the knowledge of what this list contains comes from and is imported from. How does the public school instructor know what to give? Are there any guides? What are the public school textbooks for? Do they contain the information with which to fulfill the lists? What if there were no textbooks? How would the instructors know what to teach?

If there are textbooks, we have another question. How much of what they contain has to be given at any one time? Do we have to divide the content of a textbook into portions to be served at any one time? Who measures the portions? We all know that individuals require different sized portions of food – do individuals' minds require different portions of information?

What about the times of the servings? Are these set by the server? Does this mean that a schedule has to be drawn up and notice given that such and such a serving is to be offered at such and such a time? What about those not ready to be served at the set time? Can they attend at some other time? If not, do they miss out completely? Or must they be coerced into coming at the times set? Suppose they still do not want to come? Can rewards and punishments be brought into play? Good marks and bad marks given?

We may all recognize that these problems arose with the onset of the idea of universal education – with Napoleon's decision that all the French should be educated, and that this was necessary if he was to conquer the world. This meant the setting of the age when compulsory education should begin. This became six in the United States, five in the United Kingdom, seven in Scandinavia. Interesting! What was it based on? It seemed obvious to those entrusted with the administration of compulsory education that if children were to be administered doses of information, they had to be able to sit and listen in order to receive the dose. An interesting question might be to try to find out what type of tests resulted in the setting of the various ages in different countries. Why could we sit still a year earlier in the United Kingdom than you could in the United States and two years earlier than in Scandinavia?

And then there is the measuring up of the information which brought about the measured syllabus and curriculum.

This meant a time frame. So was brought about the length of a year's schooling, the length of a week's schooling, the length of a day's schooling, the length of a period of instruction in the day and the measure of what was given in each period.

And so we have universal public instruction. But do we have educated societies, composed of universally educated individuals able to think logically, to reason? Maybe we have questions about the efficiency of universal public instruction and its ability to create thinking individuals.

What of Cosmic Education? Is it a variance with the public school curriculum? What is its aim and purpose and are they so different from what public educators professes?

In the introduction to her book, *To Educate the Human Potential*, Dr. Montessori states: "We claim that the average boy or girl of twelve years who has been educated till then at one of our schools knows at least as much as the finished high school product of several years' seniority, and the achievement has been at no cost of pain or distortion to body or mind. Rather are our pupils equipped in their whole being for the adventure of life, accustomed to the free exercise of will and judgment, illuminated by imagination and enthusiasm. Only such pupils can exercise rightly the duties of citizens in a civilized commonwealth." This is the significant conclusion.

Do you think that public school educators would quarrel with this aim stated by Dr. Montessori for children from Montessori schools? So if the aims are the same, what *is* different in Cosmic Education?

Again in *To Educate the Human Potential*, Dr. Montessori gives a picture: "...the Cosmic Plan can be presented to the child, as a thrilling tale of the earth we live in, its many changes through slow ages when water was Nature's chief toiler for accomplishment of her purposes, how land and sea fought for supremacy and how equilibrium of elements was achieved, that Life might appear on the stage to play its part in the great drama."

Before going further with a discussion of Cosmic Education, I should like to draw attention to some of Dr. Montessori's directives. We need to be reminded, perhaps, that the elementary training courses do not, or should not, make up their own methods to give to the students of their courses. What has Dr. Montessori to offer to teachers in their classes?

"All other factors however sink into insignificance beside the importance of feeding the hungry intelligence and opening vast fields of knowledge to eager exploration... we have learnt from him (the child) certain fundamental principles of psychology. One is that the child must learn by his own individual activity, being given a mental freedom to take what he needs, and not to be questioned in his choice. Our teaching must only answer the mental needs of the child, never dictate them... He must have absolute freedom of choice..." (*To Educate the Human Potential*, pp. 6,7)

"It is certainly necessary to centralize the interest of the child, but the usual methods today are not effective to that end. How can the mind of a growing individual continue to be interested if all our teaching be around one particular subject of limited scope and is confined to the transmission of such small details of knowledge as he is able to memorize? How can we force the child to be interested when interest can only arise from within? It is only duty and fatigue which can be induced from without, never interest!" (*To Educate the Human Potential*, pp. 8,9)

Have we any questions to ask ourselves from these words of Dr. Montessori about Cosmic Education?

"The Cosmic Plan can be presented ... as a thrilling tale." Is that what we are doing? Telling a tale? Making it thrilling? "Thrilling tale." Really!

"...That life might appear on the stage to play its part in the great drama 'stage'". "...to play its part." "...great drama."

What are we talking about? Surely the child has tests to pass! "Thrilling tale," "the stage," "to play its part", "great drama." This is not the usual language of education. It would almost seem as if the elementary Montessori class is meant to be participating in theater!

I would suggest that that is exactly what Dr. Montessori envisaged Cosmic Education as being. Her son, Mario Montessori, said that Dr. Montessori became a "storyteller of the truth." She meant Cosmic Education to be the recounting of a drama, the Story of the Universe, and of our role, yours and mine, within it. If it is the unfolding of a drama, it entails the setting of a stage, the entrances of actors and actresses, the playing of their parts, their exits and the setting up of the next act. Drama surely means story. And if the drama is to do with an immensity such as the Universe, it cannot but mean story after story after story, as there is such a bewildering and extensive cast of characters to introduce.

What are the acts in this drama? You know them, though some of you may have forgotten them and therefore the children do not get to go to the theater of Universe with you. Perhaps we should remind ourselves of them, so that we do not deprive the children any longer.

Act I

The coming into being of the Universe, the Story of God without Hands.

The Stage – Nothingness, darkness, unimaginable, cold of freezing intensity, chaos.

The Actors – *The lead:* God, the Guiding Unconscious, the Great Spirit of law and order.

The supporting cast: Air and water, the sun, the earth, chemical elements.

Act II

The coming of life on earth, to bring back order from the chaos that had threatened to return.

The Stage – The earth, its land and water.

The Actors – *The lead:* Life, a tiny blob of jelly.

The supporting cast: Plants, insects, amphibians, reptiles, fishes, birds, mammals, human beings.

Act III

The coming of human beings, to complete creation.

The Stage – The prepared environment of the world, with its furnishings of plants and animals.

The Actors – *The lead:* Intellect and will.

The supporting cast: Human beings.

Act IV

The story of language – one of the two stories that human beings wrote themselves, in order to communicate their ideas to one another.

The Stage – The need to cooperate as societies.

The Actors – *The lead:* Intellect and the hand.

The supporting cast: The makers of the alphabet.

Act V

The story of numbers – the other story human beings wrote by themselves.

The Stage – The need to invent in order to construct the material and spiritual territories.

The Actors – *The lead:* Intellect and will and the hand.

The supporting cast: The inventors of mathematics.

I have not counted how many stories there are already, to be given in the Great Lessons, if we give them as drama. And what a different picture

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from the public school textbooks.

And so we have the acts of the drama, of the Cosmos, each of which sets a stage, brings on the actors, tells us something of their story. And then, as with any play, the acts have their scenes within them. So we have the scenes, telling the stories of the supporting actors and all helping to bring the child to a realization of the wonder, the mystery, the magic, that is the Universe, and all that belongs to it.

It is because we involve the child in this wondrous story, making him aware of the environment that was prepared for the coming of his own species, and showing him what other human beings have contributed to the continuance of the story, that he is led eventually, Dr. Montessori said, to ask, "What am I? What role have I to play in this marvelous Universe?"

So this is Cosmic Education – nothing but story after story after story after story. Story of the service of all to all others. All children love stories if they are told engagingly, if they are part of the teller, if the teller enjoys telling them. Where do we find the stories? In our albums. Have we not got the Great Lesson and the Key Lessons there?

Does it appear as if Cosmic Education and the public school are at variance? On the surface and from their approach to education, it would seem so. Is there any way they will not be? Can we make them not at variance?

What about doing the following in the class?

- Tell the children they must always start the day with language and mathematics and do a required amount of work in each of these subjects before being free to do anything else.
- Complete a workbook assignment each day.
- After a lesson from the teacher, do assigned work on it, always.
- Use prepared cards for examples for language and mathematics work, always – the children should never make up their own examples. They might come up with something they cannot do.
- Write on the board each morning what work has to be done that day by each group.
- Divide the subjects within Cosmic Education into what is for first years, second years, third years. If you are in first year, you may not go to a lesson being given to second years, and so on.
- At the beginning of the day, get the children to write a list of what they are going to work on that day.
- Forget about stories, the children have assignments to do and tests to pass.
- Remember that the children have to do spelling tests, conduct inquests on and dissection of any book they may read.
- Remind the children that reading is not for enjoyment, it is for comprehension.
- Also use work sheets, SRA Reading booklets, Spaulding spelling, Great Books, Writing Workshops, job sheets, assignment sheets.

If any of this is going on in your class, you will be doing a good job in ensuring that you are not at variance with public schools.

Does this type of program appear to be at variance with Cosmic Education, even if it is therefore not at variance with the public school? If it is at variance with Cosmic Education, why is it being done in Montessori schools?

Is it because we have no faith in Montessori?

Is it because we have no faith in Cosmic Education?

Is it because we cannot do Cosmic Education?

Is it because of parental pressure and we are afraid?

Whatever the reason, we are depriving the children of the opportunity of being exposed to the challenge that is Cosmic Education. I am tempted to think that we, the adults, want to feel secure. A syllabus gives us ready made doses of knowledge that we can take without effort on our part and administer at a given prearranged time to prearranged children.

Maybe we have forgotten that Dr. Montessori, when giving us Cosmic Education, also counseled us not to forget that the children have to be able to fit into the society of their times, and its requirements. There is absolutely no reason why a child exposed to Cosmic Education should have any difficulty in fitting into traditional education when he has to make that move.

Dr. Montessori has told us, in *To Educate the Human Potential*, "We claim that the average boy or girl of twelve years who has been educated till then at one of our schools knows at least as much as the finished high school product of several years' seniority, and the achievement has been at no cost of pain or distortion to body or mind".

Had Dr. Montessori any advice or guidance to help the teacher give the children the vision inherent in Cosmic Education, the freedom to explore anywhere and in any order and at any time the components of Cosmic Education, and at the same time, enable the child to fulfill the requirements of the public school?

Dr. Montessori did give us advice and guidance on this matter. We all heard it presented in our elementary course. We have all got it in our albums. We have, therefore, no excuse for reverting to traditional methods of teaching. Why, then, are we doing so? Are we just cowards, have we no faith, is the answer just as simple as that we cannot teach? And therefore, should not be in Montessori schools, but take up some other work. Is the answer that we do not want to give Cosmic Education?

But let us look at Dr. Montessori's guides to us, remind ourselves of them, and see if they are so difficult to implement.

I. First – The child's individual diary of his work, or daily journal, or whatever you may wish to call it.

This is a daily, dated and timed, beginning and ending times, of the lessons the child was given, the other work he has done, during each daily morning and afternoon session. It is, therefore, a daily record of the work the child has done. It is **not** a list, written at the beginning of the day, of what the child **intends** to work at. It should **not** be, either, a list given him by the teacher of what **he is expected to do** that day. The **only** way it is going to be of use is if it is a record of the child's work done, and/or the lessons given to him, each day.

The importance of this record.

It helps the child become responsible for his own work, for what he does. It helps him discipline himself to work. It helps him begin to become responsible for his use of his time.

The diaries themselves.

It is absolutely essential that the diaries are kept in very attractive small notebooks. The children cannot be expected to respect any of their work if it has to be done in unattractive notebooks, on unattractive paper. If there is no money to buy the notebooks, school fund-raising money should be used.

II. The regular meeting with the child.

It is essential that teacher and child meet regularly. During the first year of the child's work in the elementary class, the meetings should be once a week. As the child gets more used to regulating his own work, this may be changed to once a fortnight. Towards the end of the child's stay in the elementary classroom, the meetings could become monthly. But always the individual's need should be monitored – some children may always need a weekly checkup.

Purpose.

At the meeting the child should have with him his diary and the work done during the week. The teacher looks with the child at the diary, commenting on the timing of the various recordings, asking the child what happened if there is a long gap between ending of one activity and the beginning of another, discussing with the child the absence, especially if it is a continuing absence of any subject, discussing with the child his progress with any project engaged in, noting how the child is doing with anything the public school requires, for example, correct spelling, knowledge of multiplication tables, arranging with the child what he will do with gaps and public school requirements.

At the same meeting the teacher and child look at the child's work, discuss it, make decisions about anything that needs taking care of. In this way the child is helped to take responsibility for his own work but he is not assessed without his input and collaboration. And the needs of the public school requirements are taken care of, without recourse to workbooks and test cards, and time set aside to do nothing but the public school curriculum.

III. The requirements of the public school curriculum.

The yearly requirements of the public school curriculum should be available to the children, so that they can check for themselves as to how they are doing, in the every subject and make sure for themselves that they are not falling behind, according to their age level. The teacher must also be aware of where each child is. It is the joint responsibility of the child and the teacher to make sure that, when the child has to move to public school from the Montessori school, he is prepared for that move.

With the guides given us by Dr. Montessori, which, if we use them, ensure that the child will be prepared for public school, we can give the child the freedom of Cosmic Education.

Cosmic Education is designed to afford the elementary child a vision of the Universe and of his personal role within it. If we are not allowing the child the possibility of sharing in this vision, why are we pretending to be Montessori teachers? Are we not able to participate in that vision?

The poet tells us:

And some take the high road,
and some take the low.
And in between, on the misty flats,
the rest plod, to and fro.

What a picture that word *plod* gives us! How sad it is! How joyless. Perhaps we have questions to ask ourselves. Where do I stand? And where am I going to stand?

Have you managed to make Cosmic Education not at variance with the public school curriculum? And are you comfortable with that? Or would you like to make of your elementary classroom a place of excitement and wonder, a place which will allow the elementary child to become, as Dr. Montessori said he could be, "a hope and promise for the future".

The responsibility is yours. What is your answer going to be to the question of the future of Dr. Montessori's Montessori in the United States; to the question of whether Cosmic Education will have a chance to influence the elementary children in this country?

Cosmic Education can be done, otherwise Dr. Montessori would not have proposed it. It is being done, in a few classes around the country – lucky the children of those teachers! Have you the will to do it also, if you are not already doing so? ◆

Margaret E. Stephenson studied with Dr. Maria Montessori for many years and, in 1960, was commissioned by the Montessori family to travel to the United States as a teacher trainer for the Whitby School in Connecticut. In 1962 an AMI training center was opened in Washington, DC with Margaret Stephenson as its Director of Training. Miss Stephenson was the Director of Training at The Montessori Institute of Milwaukee, Inc. from 1989 to 1995 and continues to lecture at this center. She currently remains involved with Montessori as an AMI lecturer, teacher trainer, and examiner. She is also a member of the Sponsoring Committee and is qualified to direct AMI primary and elementary courses.

The Atrium: Silence, Simplicity, Movement, Symbol and Joy

Linda Kaiel

It is interesting to note that for the many centuries which humans have lived on this planet, it took the observations of Dr. Maria Montessori to gift us with the educational insights we presume today. "Seeing what was already there, with new eyes," her keen observations as a scientific observer in the areas of human growth and development, led to what has come to be called, *the century of the child*. Today I would like to share with you the work of two other women who have followed in Montessori's footsteps, and who have looked at the development of the human person in relation to what Montessori terms, "the spiritual needs of humans." These women are Gianna Gobbi, who worked with Dr. Montessori, and Sofia Cavalletti, a Scripture scholar. Together in the city of Rome, since the early fifties, they have pioneered a method of religious education, a process which has come to be called, *The Catechesis of the Good Shepherd*. This process for children ages 3 through 12 invites the child to experience and form an authentic, faithful relationship with God. The Catechesis is grounded in scriptural and liturgical study, framed by Montessori's principles of human development. It allows children to hear the Gospel through sensorially rich materials which represent essential proclamations of the Christian message. The task of the adult is to prepare the sacred space called the *atrium*, where children can respond to this invitation. The *atrium* is a place of community and worship rather than a classroom for academic study. It is a place to be with and enjoy God, listen to the Word, and to pray. Designed to reflect the beauty of creation, as well as God's abiding love, the *atrium* has a colorful history. In early Roman homes, the courtyard or entry was called the *atrium*. Early Christian basilicas took their structure from civic buildings, which always had an *atrium*, to link the life of the street with the specific task of the building proper. In early churches, this *atrium* space became the place where converts were introduced to the tenets of the faith, At the Easter vigil they were baptized into the community and into full membership in the church. Visiting churches in Rome today, one can tactilely experience the "faith of our fathers and mothers" in the *atriums* which bear witness to their faith journey.

Today I would like to share with you the simple elements which reflect the essence of an *atrium*. This September I will begin my twelfth year with students who attend the Franciscan Montessori Earth School, and come to the *atrium* on a weekly basis. My reflections are the fruit of this time spent with the children, the rich content of lectures shared by Sofia Cavalletti, Gianna Gobbi, and others who do this work, and from my work with adults who seek to be formed in this work so that they can serve as catechists with children in parish, school, or home settings.

Silence

Those of us who are Montessori professionals have seen with what delight children participate in the "silence game." Here they are given an opportunity to control their bodies to produce silence. Those of us who are mothers have watched with delight as our child discovers a hand, its capacity to bend, its attachment to "me!" As concentration is born in the human person, and allowed that fertile space to grow, the rich soil where this takes place is silence. And so this holds true for our relationship with the sacred, the transcendent. The silence one seeks and encounters in an *atrium* is a fertile silence of encounter. Here the child has come to meet someone, to be invited into a life-enriching relationship, to listen and to reflect on the Word.

Before my work as a catechist, I was a guide in a children's house classroom. As one becomes a Montessori professional, writes album pages, and observes children at work… the silence which follows a productive work cycle is often the natural fruit of a period of concentration. The indirect aim of the work is linking the child to other skills his/her body will need in its growth and development. A simple example, the grasping of the knobbed cylinders with three fingers, is an indirect preparation for writing (being able to hold a pencil). The work in the *atrium* gives the child the skills to create silence and then to use this silence as a place for reflection on the Word from Scripture which was shared in a group setting or in an individual lesson. The youngest children have a great capacity to move between the worlds of transcendent and immanent, and they are the natural age to share the riches of the Incarnation. They want to know more about this divine presence which touches their life and calls them by name (as in the parable of the Good Shepherd.)

Sometimes at the close of an *atrium* session, I choose to read a story to a gathering of children, while a few are still putting their work away, and before it is time to line up and return to their classroom. One day I read the picture book, *Jesus Stills the Storm*, the story of how even the wind and waves obeyed Jesus when they were out on the lake and a squall came up. A different kind of storm was raging in one of the five-year-old boys. He was struggling with some issues of identity, sexuality, power, frustration. Sometimes during the work period he would steal a piece of someone else's work and then run off with it to get some attention. As he was able to gain more fine motor control, he began to copy some of the Baptism materials to make a small booklet. When it came time to make a cover for the booklet, he spent a long time on the cover, very intent on his drawing. When it was finished he brought it to me and said, "Do you know what it is, Linda?" He had drawn a simple sketch of the boat on those raging waters, and had written ***BE STILL*** in bold letters.

Be still

For each of us this is an invitation to be in God's presence. The space where we are can be a space of sacred encounter, a fruitful space to be empty and allow the Word to take root there, a space for reflection, a space for growth, a space for listening.

Simplicity

The first year I faced the challenge of setting up the *atrium* environment, with its areas for liturgical work, as well as the historical life of Jesus (Infancy Narratives and geography materials of the land of Israel) one idea kept recurring in my mind. Keep this space simple. How much clutter can I imagine in a simple home in Nazareth? With what simple images did Jesus choose to share the wealth of the Kingdom of God in his parables? ...a mustard seed, a woman baking bread, a precious pearl, a hidden treasure, a man sowing a field, a shepherd caring for his flock. In choosing to set up a diorama for an Infancy Narrative story, the Annunciation (the Scripture story where the angel Gabriel comes to ask Mary to be the mother of Jesus), ... it was important to keep Mary's home a humble dwelling and the figures of Mary and the angel unadorned. Each work that the children manipulate should lead deeper into the mystery of the Scripture, not distract with unnecessary detail.

Even in the work used for our practical life, I tried as much as possible to avoid the plastic patina of our century and to choose the timelessness of clay and fabric, the touch of wood, the use of baskets to hold paper supplies, and simple pitchers as water containers. Art expression is an important area in the *atrium*, because it provides a "canvas" on which children can reflect what they have seen, what they have experienced, what they have heard. One girl chose to do a dove's eye view of the stable scene in Bethlehem ... another boy sketched the Magi as they traveled following the mysterious star. After much furious coloring and an accompanying self-absorbed conversation, a young boy came and requested that we write, "the red sea, the black sea" next to the appropriate areas. A simple white sheet of paper, a basket of crayons, a tray of three watercolor paints and the rich content of Scripture and meditation to reflect upon... What response will I make?

There is simplicity in the use of language as well, in how the children are greeted as they enter the *atrium* space, in the length of time and the content of a meditation on Scripture, in the quality of a presentation, in a communal celebration such as Pentecost, and the changing of the colors in the prayer corner appropriate to each liturgical season. Always these actions serve as a backdrop or as scenery does in a play, so that the principal actors, God (the divine presence) and the child, can be about the principal action in the drama, that of developing and nurturing a relationship, one with the other.

And this manifests itself in very simple ways, as one young boy marveled at the bloom on a red geranium which he had watered the week before. Where did that flower come from? Was his care a part of that mysterious growth and blossoming? All of the work of practical life becomes a prayer in itself, as the littlest ones exert control over limbs, pouring water, filling the cruets for Mass, walking in procession, carrying a lit candle, snuffing a candle, folding an Altar cloth, and washing plant leaves near the prayer corner. 'Tis a Gift to be Simple' is an old Shaker hymn.

Movement

What a wealth Dr. Montessori shared with us in focusing on the small child's need for movement! She observed how the human body takes in information at certain developmental planes, and then provided an environment which was structured to meet those developmental needs. The *atrium* attempts to do this for the child. One of the adages I recall from my own Montessori training was, "Never give more to the eye and the ear than you give to the hand."

What Gianna Gobbi realized early on in the development of this particular catechesis, was the need that the rich content of Scripture be enfleshed in practical materials which the child could move. There is the movement of the child from shelf to mat or table to set up the work, be it a Kingdom parable, an Infancy Narrative diorama, the liturgical calendar, or map of the land of Israel. During all of this movement, as well as in creating the setting for a diorama, there is time for the child to reflect on the Scripture content, on their own encounter and presence in this revelation. Each child brings their own dignity and personality to this relationship. One six-year-old girl, after setting up the nativity scene on her rug with some flourish, said in an excited tone, "Quick, Baby Jesus, hide under the straw. King Herod is looking for you!" She had heard the story of the flight into Egypt and the element of danger.

All of the work which leads to the capacity to play the silence game, as well as the work of walking on the line which are done in the Montessori classroom, find a natural expression in the *atrium*. Here I am silent to hear Someone speak. Here I am silent to listen as others share of their faith in this loving God. Here I am able to walk in procession, carrying candle, or plant, or statue of the Good Shepherd to prepare the prayer corner. Often I watch the "beehive" activity of the littlest ones as they work in the expression area, set up rugwork, water the plants, and move throughout the space – and then observe the fruit of that movement when they transition to lower elementary, and reach the stage of hand control where they carefully copy maxims, or excerpts of psalms and prayers. Each with deep concentration and centered thought creating a near monastic atmosphere for a period of time. We have seen all the necessary movement which has brought us to this place.

Occasionally Sofia speaks of the "scandal of the incarnation". This taking on of human flesh by the divine, this becoming one "like us in all things but sin", as one of the eucharistic prayers proclaims. Movement is such a part of what it is to be a human person, it is comforting to know that the movement itself can be a form of praise and prayer and presence. The smallest children are comfortable in this knowledge, as are those very ones who are physically or mentally challenged (specially-abled). The parable of the Found Sheep speaks to their heart as does the parable of the Good Shepherd. We had one student in the children's house who was always "on the move". He would, with great speed and not a great deal of concentration, take out all the lessons he knew in rapid-fire fashion, one after another, but staying with nothing long enough to become engaged. Until one day the parable of the Found Sheep spoke to his need. As soon as the lesson was over he began to work with the sheepfold, walking that sheep down the path 'til it wandered off and became lost. Over and over the shepherd would climb down to take that sheep joyfully on his shoulder. For forty-five minutes the child worked, who had never been able to work with anything for longer than five minutes up to that time. Here movement is able to link the reality (essential message) of the scripture with his own experience, crying out to be "found".

Symbol

In the text, *The Way of Response*, Martin Buber, shares that "by creating symbols, the mind comprehends what is in itself incomprehensible: thus, in symbol and adage, the illimitable God reveals Himself..."

What Sofia and Gianna have managed to do in a clear direct manner in this particular catechesis, is take the symbols of the church (light, water, bread and wine, etc.) and proclaim the essential quality of each to life as it is lived in the faith community. Each of the eucharistic gestures holds a treasure of faith, not only the faith of those in whose footsteps we follow, but a proclamation of our own faith in this divine person, an invitation into the very life the Trinity enjoys.

In the parable method, the hearer of the Word is invited into the content of the story and invited to reflect on the beauty of the precious pearl, the mysterious power and capacity for growth found in a tiny mustard seed, the slow growth of the leaven working in a mass of dough, the delight of one who has found a treasure, and the joy of one who has been called by name. Children have the amazing capacity to move to the heart of this invitation, to be in relationship with the divine, and to make their own unique response. Symbols become those physical signs, where the heart of the mystery is held and appropriated. Children learn to recognize the symbols of their faith community and the gestures and responses that are a part of their journeying as the people of God.

Each year in our *atrium* we celebrate the feast of Passover with a Seder meal with the students who are in the lower and upper elementary classes. In the weeks preceding this time we retell the story of Moses and the exodus from bondage in Egypt. We remember the plagues, and all of the Hebrew prescriptions for preparing for the exodus (the preparing of the lamb, eating while standing and dressed for a journey, the marking of the door with the lamb's blood...). When the actual time comes for each group to partake of the meal and say the Hebrew prayers, the Jewish concept of "the memorial" invites us to pray with Hebrews throughout the world, in every generation, each person must look upon himself as if he personally had come out of Egypt. As it is said, "He brought us out from there that he might lead us to, and give us, the land which he pledged to our fathers."

We are not just remembering this event, but, in a tangible way, the past is made present. This also takes place in the study of liturgy. At the eucharist, the Paschal meal, we proclaim, "Christ has died, Christ is risen, Christ will come again." The past is made present and touches the future. At the eucharist, we stand not only at the table with Jesus, at the foot of the Cross, and at the tomb with the astonished women, we also stand in the presence of those who have gone before us in the faith and those who jubilantly praise God's glory for all eternity. These events are lifted out of time, and symbol allows us to be present "as the illimitable God reveals Himself..."

Joy

This is perhaps the element or quality of the life we share in the *atrium* which touches me most deeply as a catechist. It is with some trepidation and a good portion of humility that I do this work, and I feel richly blessed to be able to share this work with so many children. It is refreshing to hear the words of Scripture season after season, always with varying nuances of meaning because of who I am, and who I am becoming, and who I am called to be.

One of the realities that we share with the older students is a long reflective period on the Kingdom of God. This begins with Kingdom parables at the primary level, and continues with the study of timeliness, the focus on creation, redemption and parousia (when the kingdom reaches perfect fulfillment "God will be all in all"), and then a look at the plan of God as it has been lived throughout history (the history of salvation). As we reflect on each of these there is always that capacity of wonder. How did early humans feel as they looked up at a night sky, illuminated by stars? And what about the gifts of birdsong, an exquisite flower, the touch of cool water? How many gifts there are in this kingdom. Who has prepared them? And for whom have they been created, called into being?

This capacity of reflection, so strong in the youngest of children, gives them the ability to simply "be" in God's presence. They are able to enjoy the gift by ***being***, not so much as in doing, or making an active response. Those adults who use centering prayer to bring their body and mind to that place of ***being*** in God's presence, recognize that the littlest ones in the purity of their enjoyment have chosen the better part (as in the Scripture story of Martha and her sister Mary; Luke 10: 38-42).

In the first course I attended with Sofia, she mentioned the book, *Sacred Sign* by Romano Guardini. Last summer I was able to hold that little book in my hand, and this year was able to read more of this man and his work in the text, *Romano Guardini, Proclaiming the Sacred in a Modern World*. One section asks the question, Are we capable of a genuine liturgical act? "The essence of liturgy is an encounter with God through Jesus Christ. …Are we capable of this?" Guardini writes: "The more we think about these long-familiar things the clearer does their meaning grow. Things we have done thousands of times, if we only look into them more deeply, will disclose to us their beauty. If we listen, they will speak… We must learn how to see, how to hear, how to do things the right way… Regarded thus, they yield to us their essential nature… Under the simplest exteriors lie the great mysteries."

Martin Buber, in sharing about ***hallowing***, speaks of this need to reverence all of creation. "Hallowing enables the body to fulfill the meaning for which it was created." When children respond to the Word as it is proclaimed to them in the *atrium* setting, all of their movements, their choice of work, the simplicity of their uttered prayers and written responses, their art expression, their recognition of symbol, their silence in a meditation, all are elements of recognition of the gift and a delight in the joy of being in the presence of One who demands no greater response. ❖

Linda Kaiel received her AMI primary diploma from the Washington Montessori Institute. She also holds certificates for the 3-6, 6-8, and 9-12 levels in the Catechesis of the Good Shepherd, having studied under Sofia Cavalletti, Gianna Gobbi and others in the United States and Canada. Mrs. Kaiel is currently a catechist at the Franciscan Montessori Earth School in Portland, Oregon, working with students aged 3-12 years, and serves on the Board of the Catechesis. She continues with consultation and formation work to mentor adults in bringing the *Catechesis of the Good Shepherd* to Australia.

Family Star

Martha M. Urioste, Ph.D.

The Family Star 0-3 Early Head Start Project funded by Washington D.C. now has been in existence since September 30, 1995. For those who are unaware of the Family Star history, there is a packet of information which can be sent regarding the specifics of the Family Star Montessori Infant Parent Education Center for 0-3 children in Denver, Colorado.

Last year, Family Star Education Director, Lereen Castellano urged the Family Star board to consider expansion and soon thereafter, the Family Star leadership gathered a group of writers to develop a proposal which would be sent to the National Early Head Start Office in Washington, D.C. In August, 1995, Family Star hosted the Early Head Start visitors from Washington in order to confirm that Family Star was indeed a project worthy of funding and furthermore, that the community supported the Family Star project. On September 30, 1995, the good news arrived.

The start up funding package for the first year, September, 1995 through September, 1996 was $880,000. The follow-up funding package has been set for $810,000 for the following four years. Included in the funding package is a request for significant line items which include renovation, staff development, personnel and salaries, local research and evaluation, in addition to other line items which are common to most operational practices of a nonprofit organization such as Family Star.

This Early Head Start project is one of seventeen pilot projects in the nation designed to develop an effective 0-3 early childhood education model during the next five years. This model is particularly important because it focuses on 0-3 children who qualify for the "poverty criteria" within the "inner city" and also because it is the only Early Head Start Montessori center based model in the country.

For Family Star, the challenge is that of continuing to promote the original vision of empowering neighborhood women with the AMI Montessori 0-3 training, diploma, and employment; training neighborhood women as Montessori assistants in the 0-3 classrooms, and also of providing 0-3 children from northeast Denver and at large with a quality Montessori 0-3 center based child development model which provides them with an opportunity to apply for and enter into the successful Denver Public School Montesssori Program for children who are ages 3-12. This continuous educational experience has been one of a kind in an inner city in the nation for the past five years.

Now, with the financial assistance of the federal government, Family Star will be able to expand its staff development vision and also to expand its location to another part of the city. In addition, Family Star will be able to provide the AMI Montessori 0-3 child development principles to children of 75 families in greatest need who fit the poverty criteria. Current plans also include a local research model being developed with the help of Dr. Emde and his associates of the University of Colorado Medical Center.

Family Star will follow the required national 0-3 Early Head Start guidelines and implement the "four cornerstones" which are *child development, staff development, parent development*, and *community development*. Family Star will be required to report progress to Washington, D.C. four times a year. Each report will follow a specific format and attach the quarterly budget report as well.

Between September 30, 1995 and July 25, 1996 major national, regional, and local events have impacted Family Star directly and indirectly. Some events have had a positive effect; others have been major challenges. Specifically, with the end of the court order in Denver, Colorado and other major cities of the nation, the Montessori focus in the public sector has been weakened by local citywide thrusts toward a return to neighborhood schools.

Quite unexpectedly, on November 9, 1995, while the Family Star Early Head Start program was being presented to Montessori colleagues at a NAMTA conference in Cincinnati, Ohio, the Denver Public Schools' Board of Education made a decision during their working session that the Mitchell Montessori School program would be moved to Southeast Denver Bradley School in order to make way and space for returning students to northeast Denver. This decision was made public by way of the local newspapers and concerned Montessori leaders from Denver, Colorado called to inform "Cincinnati" of the latest developments. This decision created a need for the Denver Mitchell principal, CDM, Mitchell Montessorians and the Family Star leadership to carefully discuss the ramifications of such a move. During the initial meetings with concerned Montessori staff members, it became clear that Dr. Maria Montessori's original vision and future action in the San Lorenzo piazza in Rome, Italy was similar to the northeast Denver vision. Therefore, any future action would be in keeping with Montessori values which would nurture, support, protect, and embody all children in an urban setting such as northeast Denver. Furthermore, Montessorians who preferred or were drawn to work in a public school in an urban setting such as northeast Denver would have to stand firm in their belief system of how best to serve all of the children at the Mitchell Montessori School.

Between November, 1995 and March, 1996, Mitchell Montessori School and Family Star were significantly impacted by the end of the Denver Public School desegregation court order. The board decision to move the Mitchell

Montessori School to another location in the city raised philosophical and logisitical issues for Family Star. The most significant impact to the Early Head Start Project was that no longer would there be a priority for Family Star to provide the appropriate educational transition opportunity for 0-3 graduates of the program.

Major Issues

- *Physical separation of Family Star and Mitchell Montessori*

For years, Mitchell Montessori provided Family Star with in-kind Montessori expertise and needed space. Family Star Montessori directresses interacted with Mitchell on a daily basis, taking infants through the school on strollers, using Mitchell's playground equipment, and often using facilities collaboratively for educational activities. Many times, children from Mitchell Montessori came over to Family Star to read to children as part of community service. These formal and informal activities developed strong bonds and a promise of continuous Montessori education for children ages 0-12.

- *Philosophical disruption of the ongoing relationship between Family Star and Mitchell Montessori School*

With the national funding of the Early Head Start program, Family Star had every intention of identifying 0-3 infants and toddlers from the satellite sixteen boundaries of northeast Denver. These satellite sixteen boundaries were used by the school district to give children priority into the Mitchell Montessori program at the age of three.With financial assistance from the Early Head Start, younger siblings from Mitchell Montessori could and would also have priority to enroll as Early Head Start infants and toddlers at Family Star and then automatically continue at Mitchell Montessori, thereby providing them with a continuous Montessori experience for ages 0-12.

- The Denver Public Schools' Board of Education decision on November 9, 1995 to move the Montessori program from Mitchell Elementary School forced the Family Star Board of Directors to assist in the creation of the Northeast Denver Concerned Citizens Group. This group consisted of Family Star and Mitchell Montessori School families and community leaders who were committed to the "Save Mitchell" movement to keep the school in the northeast neighborhood. This group worked closely with the Mitchell Montessori Collaborative Decision Making Committee and on December 7, 1995, Family Star board member Honoria Neihaus presented information to DPS Board of Education about the Family Star/Mitchell partnership.
- Between January and March, 1996, Family Star Board of Directors, employees, and families attended Board of Education meetings, met with the Mayor and the Mayor's Education Director, met with the Board of Education President, and walked the 80205 neighborhood for signatures on "Save Mitchell" petitions.

Outcomes

January 21: Board of Education rejection of initial Mitchell Montessori School proposal to maintain the Montessori program at Mitchell School.

February 8: Mayor's recommendation to the Board of Education to request that the Northeast Denver Concerned Citizens Group be allowed to present an educational plan to maintain the Montessori program at Mitchell School.

February 20: Board of Education rejection of the Northeast Denver Concerned Citizens Group plan and decision to move the Montessori School to southwest Denver at Denison School.

March orientation sessions were held with Family Star board members, employees, families, and community leaders to explain changes in the Early Head Start program design.

During this period of time, Family Star personnel had an opportunity to receive technical assistance and new information and knowledge at local, regional, and national meetings. The national meeting in Washington, D.C. was most inspirational in that Family Star was able to meet with representatives from the 68 national Head Start programs which included the seventeen new 0-3 pilot project programs.

Specific technical assistance included a partnership with Management Partners and accounting firms specializing in non-profit fiscal management. Management Partners installed a computerized financial management program which will aid Family Star in tracking every fiscal aspect of the program. They have provided sound advice, loaded past records, and trained the Family Star administrative assistant to use the system.

The physical separation of the Montessori public school from Northeast Denver created a ripple effect which also impacted on the final decision to expand Family Star to another location in the city. After many efforts to obtain a new site in the northeast community, it became clear that a Family Star expansion to north Denver would be more cost efficient and would also be more accessible to another needy population in the city. To date, the renovation project has been delayed and it is likely that the new Family Star site doors will be opening in mid to late September, 1996. Such delays have been approved by the national Head Start headquarters.

Changes continued to challenge Family Star as Mrs. Alicia Sheridan, Executive Director, informed the Family Star board that she would be leaving Denver due to personal and family responsibilities. Family Star then recruited over 80 applicants for the executive director position and selected Mrs. Elizabeth Thompson as of March 25, 1996. Among Elizabeth's past experiences was her successful launch and leadership of the City Year Americorps Program in Chicago, Illinois. Among the reasons for hiring Elizabeth were her strengths in areas of Family Star's future focus on fundraising and building of strong and permanent infrastructures.

Due to time constraints and other local issues, Family Star did not apply for the local research grant. Soon thereafter, Washington, D.C. contacted Family Star, indicating an interest in providing Family Star with a research

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opportunity in order to determine the effectiveness of a Montessori center-based infant-parent education model in the 0-3 Early Head Start funding cycle. Dr. Robert Emde, local researcher for the Family Futures Project and member of the faculty, psychiatry, University of Colorado School of Medicine, is now in the process of applying for national moneys which would assist him and his team in local research of identified children of 75 families. This potential research opportunity is extremely important to the Montessori community given that Dr. Emde has always been involved in the emotional, social, and moral development of youngsters and the interplay of relationship between the adult and the youngster. In addition, the local research project will also highlight the uniqueness of the 0-3 Montessori training and the characteristics of 0-3 Montessori child development which set it aside from other daycare opportunities.

The research model is restrictive in the sense that all identified infants must be admitted to the infant *nido* sites between January, 1996 and September, 1997. The current research model includes twenty unborn infants of pregnant women, and 56 infants who enter at ages two months through ten months. Because of the tight timeline for entry of the infants as well as a limited number of infant sites, Family Star may have to forgo the original integrated model of "head start" children and "other" children. Family Star will be notified by September, 1996 about the opportunity to be included in such a model. In the meantime, the newly hired Family Coordinator and Bilingual Assistant have begun their active publicity of the opening of Family Star in the new Family Star site at 22nd and Federal.

The twenty unborn children and their pregnant mothers will be involved in a "Dulas" Program and infant-parent classroom. A Montessori directress and a trained assistant will meet with twenty pregnant women, some of whom will be teens, twice a week for half day sessions which will include the following:

- information about the prenatal timeline focusing on emotional, physical and physiological changes for the mother and child for the first three years of life;
- stress management during pregnancy;
- the importance of the intentional birth;
- the physical and psychological needs of the mother and baby after birth, bonding and attachment, and the newborn's self-regulating process;
- nutrition;
- preparing the home environment;
- an introduction of the Montessori philosophy;
- completion of a family plan identifying needs for continued education or pre-employment training; this will enable the Family Star women to plan for options to attain self-sufficiency after the baby is born.

The staff will also conduct home visits during this period to ensure the foundation for a strong relationship is being constructed and to provide technical assistance for preparing the home environment. Addressing issues and the needs of participants in a more intimate manner will be key to building the women's self-confidence and to easing the transition to the Early Head Start experience.

The other 58 infants and toddlers will be enrolled into the infant and toddler rooms with Montessori trained directresses and directors over the next four years. Of course, during this time, staff development, child development, family development, and community development will occur according to Early Head Start guidelines.

With great anticipation, Family Star employees, board members, parents, and supporters await the opening celebration of the new Family Star at 22nd and Federal. Approximately eleven new AMI Montessori directors and directresses will have graduated from The Montessori Institute 0-3 training in Denver, Colorado. Due to national 0-3 funding, Family Star was able to contract with The Montessori Institute to identify the eleven finalists who would be trained in a one time only year long training with the completion occurring during the summer months of 1996. Unique has been the opportunity to select eleven finalists from a pool of over 50 interested applicants. Unique also is the fact that the eleven participants have had an opportunity to study with other participants from all over the world during the summer months, 1996.

Accomplishments between November and July, 1996, include the incredible dedication, determination, persistence and action of Family Star board members, employees, parents, and friends to alter the original plans for the project. As a result, Family Star was able to shift priorities and change structures accordingly, with additional support from the national Early Head Start program managers and technical advisors.

The Family Star / Mitchell Montessori connection was keenly highlighted this past year as the Board of Education, parents, the northeast Denver community, and the community at large realized the national importance of the continuous Montessori 0-12 model in Denver as well as the overall impact the five year Early Head Start model will have on 75 additional families and their children.

Family Star employees were kept informed on a regular basis about the continuing changes at Family Star and the importance of their leadership role and responsibility during this time. It became increasingly apparent that the neighborhood women employed at Family Star had accepted the challenge and increased their commitment to manage the Family Star Center during this time of tumultuous change in the northeast community, at Mitchell Montessori School, and at Family Star.

Community empowerment was revitalized in a very profound and dynamic way.

Family Star has reported the major "problems" to the national Head Start office, as is required of all of the 68 programs in the country on a quarterly basis.

Obviously, impetus to end desegregation in Denver is a major "problem" given that Family Star has always prided itself as a culturally and socio-economically diverse inner-city infant-parent Montessori center. The local research model, as implemented, will be a departure of the integrated model and will provide Family Star with valuable information about the possibilities to prepare a certain group of children appropriately with the Montessori center based model. At the same time, Family Star has every intention of continuing with the integrated model, one way or the other.

The physical separation between the 0-3 and 3-12 Montessori private and public partnership will pose new challenges as Family Star continues to promote the importance and necessity of a continuous Montessori 0-12 cycle for the infants and toddlers of the seventy-five identified families. Northeast Denver Family Star, North Denver Family Star, and Southwest Denver Denison Montessori Public School will have to envision new ways to maintain their connection.

The physical separation of Family Star at 33rd and Marion and the new Family Star at 22nd and Federal will necessitate new organizational structures in the expansion to a new population of infants and toddlers who are primarily Hispanic, Chicano, Mexican American, and Spanish-speaking.

Needless to say, desegregation in Denver is over. Restructuring of neighborhood communities and schools will begin in late August, 1996. Magnet schools and schools of choice will be options for interested parents.

There are days when one wonders how Montessori education can continue to survive, much less thrive, under such changing conditions. It appears that the opposition to the educational needs of the young child of age three and four is so prevalent. The majority of children in neighborhood schools will begin their educational experience at the age of five. In addition, Colorado preschool Project Early Childhood programs will be initiated in identified schools for four year olds. Denison Montessori Public School will be the only school to offer an educational opportunity for identified three year olds.

While implementing the Montessori 3-12 in the public school is very challenging, the opportunity to create a successful national 0-3 Early Head Start Montessori model is a miracle. It is the latest miracle. There have been others.

It is a miracle to realize that… eleven years ago, Montessori education was accepted as the curriculum which would successfully desegregate an inner-city public school in northeast Denver; the Montessori community is responsible for this miracle.

It is a miracle that… shortly thereafter, an abandoned crack house was converted into a Montessori infant-parent education center for thirty infants and toddlers from the surrounding neighborhood and at large; many people were committed to this project including Judi Orion, Dr. Silvana Montanaro, David Kahn, Elizabeth Hall, Paula and Paul Biwer, Paul Czaja, and others from the Montessori community.

It is a miracle that… the neighborhood women, and in particular, Marcellina Otii and Lereen Castellano, have nurtured the Family Star Center during a period of time when changes have been relentless and there has been a need to rise above toward expansion or extinction. It is their dedication and the deep knowing that they, in their transformation, are the reason for the transformation for the many who will follow.

And now it is time for more miracles… and for the type of action Dr. Maria Montessori would have recommended and insisted upon.

During those periods of time when the challenges seem the greatest and the opposition appears to be the most formidable, one must remember Dr. Montessori's trials and tribulations. If Dr. Maria Montessori could endure an exodus from Italy, exile in Spain and India, it is certainly possible to survive a move to north and southwest Denver.

If physical separation threatens our continuous Montessori 0-12 focus, then one must ponder, share, and explain the importance of Dr. Maria Montessori's Bulb model of the comparative analysis between traditional education and the continuous Montessori educational model of 0-24. Our children's futures are at stake.

It is about children, our youngest citizens of the world for whom we must prepare the way. Let it be known that the federal government has chosen to educate the children in greatest need at the most important time of their lives.

Family Star is a very challenging model. In the truest sense of the word, the Family Star board must support the "neighborhood women" to "do it for themselves, their families, and their children". Only then can a new chapter be written among the chapters of the book entitled: *The Pedagogy of the Oppressed.*

One would think that with the new moneys from Washington, D.C. all would be well. This couldn't be farther from the truth. As a program expands, so does the need for additional support structures, especially in a time of opposition.

At this time, my request from the wonderful Montessori family is that those who are interested, please participate in this next national miracle by doing the following:

- Send encouraging cards and notes to Family Star, 1331 East 33rd Ave., Denver, Colorado 80205; Attention: Lereen Castellano, Education Director.
- Volunteer to lend Family Star a name and title which can serve as a national advisory committee for the national Family Star letterhead.
- Send letters of support to Family Star, same address, so that they can be forwarded to the national Early Head Start headquarters in Washington, D.C.
- Lobby influential policy makers on the need for the child development of our 0-3 infants and toddlers as well as the support necessary for their mothers and fathers. The Declaration of Children's Rights begins with in-

fants and toddlers.

- Focus on creative new computer connections, local, regional, and national, regardless of our physical separation; let us strengthen our psychological connection.
- Send all contributions to Family Star, c/o 1331 East 33rd Avenue, Denver, Colorado 80205; Attention: Elizabeth Thompson, Executive Director. This request is particularly important in order to maintain our local program and our continued focus on the culturally and socio-economically diverse needs of our community.
- Thank Judi Orion, Dr. Silvana Montanaro, David Kahn, the Biwers, and Paul Czaja for their willingness to take the initial risk for the sake of infants and toddlers.

Collectively, we can and will make this national miracle happen. Within the next five years, the Family Star beacon will shine bright and envelop the 75 homes of the identified families and children in northeast and north Denver. Then we will be able to truly report that when there is a will, there is a way; when there are the necessary financial resources, all children will reach their full potential. All children, regardless of their color, language background, and environmental conditions can, with an early head start, have the opportunity to continue with other Montessori Ambassadors of Peace during the ages of three through twelve.

In closing, I would like to share with you an expansion of the thought, of creating miracles… individual and collective. Dr. Jean Houston urges us to "Join the potentials of our local lives to the potency of the larger life that dwells within us all, to see the universe as miraculous – and in so doing, become ***miracle literate.***"

Dr. Jean Houston was influenced during her adolescent period by Pierre Teilhard de Chardin, who in his final visits with her, shared that we are all "involved in the lure of becoming and we are a part of an evolutionary process in which we are being drawn toward something called The Omega Point, the goal of evolution." He believed that the physical and spiritual energy was always flowing out from the Omega and empowering us as well as leading us forward through love and illumination." He believed that "the universe is an evolution, that evolution is toward Spirit … that the Spirit fulfills itself in a Personal God … that the supreme personality is the Universal Christ." Thus, Pierre Teilhard de Chardin, when asked by Dr. Jean Houston, "what about you?" responded by saying that he was a "pilgrim for the future".

Dr. Maria Montessori, in her book *Education and Peace* is said to have remarked that we would be entering the century of miracles. If we will continue to recall the original "call" in 1907 and the children of San Lorenzo, we can remind ourselves of Dr. Montessori's vision to reach out to all children, particularly those in the greatest of need.

Family Star and the Denison Montessori Public School have been catapulted from their local potential to the potency of the larger life.

The evolutionary pull toward the future has had Spirit lead Family Star and the Montessori public school movement in Denver through miracle after miracle.

It now appears that the Family Star 0-3 and Denison Montessori School movement must transcend the local reality, just as it did five and ten years ago.

The Family Star 0-3 movement is looking for miracle makers who are willing to become miracle literate, pilgrims of the future, who are willing to break with the past, to create the next step toward the Omega Point.

If you have this yearning to be included as a miracle literate pilgrim of the future, please refer to the suggestions already made in this paper or create any other suggestions and actions which come to your mind.

Sincere thanks to AMI/USA for this opportunity to share the "good news".

Please call or write to:

Dr. Martha M. Urioste, presenter
1-303-745-1517
9901 East Evans Ave., # 16 A
Denver, CO 80231

ANTICIPATED RESULTS AND BENEFITS

Benefits to Children

Children who participate in Family Star will benefit in the following ways:

- For 8-10 hours each day, they will be in an environment which promotes maximum social, emotional, physical and cognitive development.
- They will enter school able to concentrate and ready to learn.
- The school readiness for Spanish-speaking children and children with disabilities will be particularly increased.
- Over their educational careers, these children will have an increased opportunity to succeed.
- They will become children who can think for themselves and do for themselves.
- In brief, they will thrive and experience the joy of learning.

Benefits to Families

Families who are part of Family Star will receive the following benefits:

- They will become part of a nurturing community which will be a resource to them in bringing about the changes in their lives which will enable them to thrive.
- Some parents will receive training and become members of the Family Star staff, and all will become volunteers or participants in the work and activity of the center.
- They will be able to stabilize their lives in the areas they identify: housing, health, safety, nutrition, education, employment, etc.
- They will learn as their children learn: they will learn more about themselves, more about meeting the needs of their children, and more about being an active member of a community.

Benefits to the Community

The community will benefit in both the short term and the long term:

- Family Star's Early Head Start program will fill a very immediate need in the community – the lack of child care services for infants and toddlers.

- Family Star has been and will continue to be a central player in the revitalization of a blighted area in the city. The neighborhood will look and feel more alive.
- Members of the community will contribute to the economic well-being of the community through their employment at Family Star and through education and training they receive as a result of their involvement with Family Star.
- Family Star's presence in the neighborhood places value on the children of the neighborhood. This brings hope to a community. ◆

Martha M. Urioste, Ph.D., has extensive experience as a teacher, counselor, administrator and university professor. Her educational background includes a B.A. in Education from Loretto Heights College; an M.A. in Spanish from Middlebury College; and M.Ed. in Guidance and Counseling from Texas Technological College; and a Ph.D. in Administration, Guidance & Counseling and Multicultural Education from the University of Colorado in Boulder. Dr. Urioste is currently the principal of Mitchell Montessori Elementary School in Denver, Colorado, as well as Cofounder and President of Family Star, a nonprofit parent education center which received a substantial national grant for The Early Head Start 0-3 initiative.

Beyond the Basic Needs: Nurturing the Full Potential of the Upper Elementary Child

Johnnie Denton

"Education as it is commonly regarded encourages individuals to go their own way and pursue their own personal interests. Schoolchildren are taught not to help one another, not to prompt their classmates who don't know the answers, but to concern themselves only with getting promoted at the end of the year and to win prizes in competition with fellow pupils. And these poor, selfish little creatures, who experimental psychology has proved are mentally exhausted, find themselves in later life like separate grains of sand in the desert; each one is isolated from his neighbor, and all of them are barren. If a storm comes up, these little human particles possessed of no life-giving spirituality are caught up in the gusts and form a deadly whirlwind.

An education capable of saving humanity is no small undertaking; it involves the spiritual development of man, the enhancement of his value as an individual, and the preparation of young people to understand the times in which they live... Education points the way to a new world to conquer: the world of the human spirit." (Maria Montessori, *Education and Peace*, pp. 34 - 35)

It is about this world of the human spirit and its conquest that I wish to speak. When I chose the title for this paper, I was thinking of the relevance of an education that addresses the spiritual nature of the human being. I was thinking of Maria Montessori's Fundamental Needs Chart. How does it apply not merely to the curriculum, but to the child himself? Let's take another look at this chart and think about its implications for the child, for his meeting his own spiritual needs.

Before noting the ways in which the human spirit is nurtured in an upper elementary class, which I will do in both philosophical and practical terms, let me make a disclaimer. The ideas put forth in this paper do not apply to the upper elementary alone, but to the entire second plane of development. However, I am focusing on the upper elementary, because the role of the teacher does change somewhat in working with the older children. Let me note two differences right away. We teachers of the 9 to 12 year olds do not get to open the door onto the universe for the children. That was done when they first received the Great Lessons at the age of six. However, there is a trade-off, because the older children have acquired a great deal of knowledge and skill, and in a sense they are ready for even more exciting adventures.

The Fundamental Spiritual Needs

Besides the circles on the Fundamental Needs Chart that depict the physical needs of food, clothing, shelter, transportation and defense, there are three circles representing our spiritual needs. These are labeled *Culture/Art*, *Religion*, and *Vanity*. We need the arts, which help us express ourselves and make tangible our culture. We need religion to guide our actions and to give us another way of perceiving and knowing reality. Finally, we have a need for vanity; perhaps a phrase richer in meaning is "Personal Beauty." As humans we have a need for personal beauty. This refers to the care we give to our physical bodies and also to the care we give our inner being, or in other words, our self-esteem and sense of morality. I like to think of the mirror within this circle on the chart as a symbol of personal reflection, a reflection of both our inner and outer selves, the way in which we come to know our personal beauty.

In discussing these spiritual needs with upper elementary children, it is interesting to note that humanity has used all its precious gifts in satisfying them: our intellect, our will, our ability to love, and our hands.

Discussion of the Spiritual Needs with Upper Elementary Children

From the time that humans first appeared on the earth, they have been using their gifts, not just to build up a physical territory of houses, roads, clothing stores and so forth, but also a spiritual territory which has spread around the globe. What gifts am I talking about? The gifts of intellect, will, ability to love and our marvelous hands.

Let's concentrate right now on our spiritual needs and how people have satisfied them.

In considering ***religion***, think of all the temples, mosques, country churches, cathedrals and shrines in the world! Think of all the sacred scrolls and books, and all the objects of worship that have been created. Why? These are a product of our intellect. Our ideas about God, or gods, or about religious ceremonies all spring from our intellects grappling with the experience of the numinous. "Numinous" refers to something that is deeply spiritual or mystical. For example, astronomy does not fully define our relationship with the universe. When we look at the night sky in all its grandeur, we are confronted with an experience that transcends our normal experiences. We begin to think about this mystery. Religion is the way in which our reasoning minds wrap themselves around this experience. When people make up a theology, which is a set of beliefs about God, they do this with their intellects. They create religion as a way of thinking about the mysteries of the universe.

What about the ***fine arts***? These have their origin in human emotions, such as love, which beg to be expressed. In a way, we want to make our feelings concrete. When we draw, paint, sculpt, dance, sing or act, we do so, because we have been given the gift of feelings. Think of all the things that humans have created to express our emotions, things such as paintings, musical instruments, ballet studios, museums, amphitheaters, concert halls…

Here's something else to consider. Our spiritual territory is *more* than all the things we have been thinking about that are in the world *today*. It has been built up over the ages. Think of the kivas, the pyramids, … I'm sure you can think of many things that have become a part of the spiritual history of people. Now here is the third spiritual need. It says "Vanity." See the mirror on the chart? I like to call this circle ***personal beauty***. I can think of some buildings and other places that humans have created for the enhancement of their personal beauty. I'm sure you're thinking of some now… But there is more to our personal beauty than our bodies. I am thinking of our sense of right and wrong, our morality or behavior. What is good behavior, anyway? And there is something else, too, that we should think about. Do you have morality if you know what is good, or do you only become a moral person if you *act* on what is good? … Yes, morality is not just a list of acceptable behaviors! It is our actions. Do we humans have a gift to help us with our behavior? Yes, we have *will*. It is our will that causes us to take action. We must will ourselves to do what is good.

Satisfying our spiritual needs is important, because we are human beings, and what makes us human, besides our chromosome count, is that we possess mind and spirit. A paleontologist from France, who lived at about the same time as Maria Montessori, wrote a book called *The Phenomenon of Man*. He said that when human beings came on the earth, they created a new sphere. We know about the lithosphere, the hydrosphere, the atmosphere, and the biosphere. He called this new layer the *noosphere*. This is how he described the *noosphere* in French: "une sphère de la réflexion, de l'invention consciente, de l'union sentie des âmes." Roughly translated, this means "a realm of reflection, of creativity, and of the felt union of souls."

Humans are part of the biosphere, but in creating another layer, the *noosphere*, they truly changed the earth. Why? This is the only sphere which is conscious of its existence. The hydrosphere does not know it exists. The rivers go on taking silt to the oceans, thunder claps from the clouds, and rain falls onto the ground, but they are not conscious of what they are doing. We humans have consciousness. Think for a minute about the time line of life. The evolution of animals tends to move towards ever greater nervous systems and brain power. And with the advent of humans, this brain power reached a new height. We are the creatures that bring consciousness to the universe. We do not merely think. We think about thinking! We have a new realm of existence. We can think, be creative, and feel interconnected. And so, we have invented a vast spiritual territory. We have done this not with our hands alone, but with our intellect, will, and emotions.

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With such a lesson, centered around the spiritual needs on the Fundamental Needs Chart, we raise the children's awareness to the fact that they are aware, and that their awareness takes different forms. Mentioning Teilhard de Chardin's concept of the *noosphere* makes a link with the idea of *cosmic task*, which I will discuss in greater depth later. When the children look at this chart the second time around in upper elementary, they may get a greater sense that they are looking at themselves while also reflecting on humanity. At the same time that they are considering the vast spiritual territory created by humanity, namely all of human culture, they are also capable of turning these ideas back in on themselves as individuals. I am reminded of a book of piano music I had as a child. On the cover was a fawn holding a book in its mouth. Upon closer inspection, that book was revealed to be the same book with a fawn on its cover, and it too was holding a book in its mouth, … and so on! These receding images fascinated me. I probably spent more time contemplating the cover of that book than I did practicing the music inside! Nine to twelve is the age in which the potential exists for the children to look upon themselves in a new way. The vision of infinity which we give the children in exploring the geometry materials and charts, has a possible counterpart in this vision of the Fundamental Needs Chart, in that we are reflecting on the fact that we are human beings who can reflect on our reflections.

Exploring the Human Spirit and its Potential

It has been said that we are not human beings trying to have a spiritual experience. We are spiritual beings trying to have a human experience. This is an interesting turn of phrase, and it is in the trying to have a human experience that I believe Maria Montessori helps us all.

Let me tell you a story.

Recently I asked the children in my class what is meant by the 3 R's, the fundamentals of education. Without a second's pause, the first word was chimed by several children at once: "Responsibility!"

Waiting a bit for the traditional 3 R's, and hearing no reply, I decided to go with this response, and wrote the word on the board. Since my job entails fostering the reasoning mind, I wanted to see what the children would come up with. The next answer followed easily, too: "Respect."

Yes, everyone agreed that these two things, respect and responsibility, are fundamental. A long pause ensued, and one child piped up with "Recess," which, after only a brief discussion, was scratched from the list.

Another child suggested "Reality," but a peer said, "No, that isn't it, because we study things in this class that aren't real, like myths and legends." The children were really trying hard now to come up with the third definitive "R", and the situation approached the level of desperation I had seen some months before, when I posed the prob-

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lem of the seven bridges of Koenigsberg to them, and they wanted to solve it themselves.

Finally one child said, "How about being *ready?*" To this another replied, "Yes, Readiness." Everyone agreed that this must be the third R, because you can't learn anything unless you're ready.

"Besides," someone said, "everyone has to be ready together for some things, like taking our bows after a play. Remember what happened when some people forgot the bowing order last year at the dress rehearsal, and they weren't ready to bow on time... And some of the primary classes were there! And it was taking forever?" There was a clear consensus about the importance of readiness.

When I told the children what the traditional 3 R's are, they were somewhat disappointed, as they had been in discovering the frustrating finiteness of the number seven and its implication to crossing those bridges of Koenigsberg. Of course, they read, write and do arithmetic, but they liked their list better. I had broached this subject in the first place, because standardized testing was approaching, and I wanted to talk to the children about preparing themselves for the event. I wanted to suggest that they apply a bit more energy to those testable acquisitions of education, such as punctuation and finding averages. As is often the case when I intend to impart a few words of advice, I became the learner. Naturally I was delighted with this lesson, and it helped to evoke some ideas about the subject of this conference, *The Relevance of Montessori Today: Meeting Human Needs*. It is apropos that the collective wisdom of these nine to twelve year olds points to responsibility, respect and readiness as the real stuff of education, and that physical reality does not totally encapsulate what school is about. While it is true that the first two concepts the children chose, responsibility and respect, play a prominent role in our class rules, and while it is also true that we often fall short of living up to them, still I think it is significant that the children see the ways in which we govern ourselves in the school and the community as the real fundamentals of education.

We live in a society in which disposable items, such as packaging materials, plastic utensils, and disposable diapers, have become the norm. We live in a world in which visual images, such as photographs of people ravaged by malnutrition or war, can be easily eradicated from our field of vision by the push of a remote-control button. The children have understood correctly that the most important lessons we can learn are those having to do with responsibility for the prepared environment and respect for one another. And they are correct in identifying the importance of readiness. In a lecture entitled *The Need for Universal Accord so that Man may be Morally Trained to Defend Humanity*, Dr. Montessori stated the following: "Contemporary man, the victim of his time, must become the master of his era. If men were prepared for their conditions of life, they would be in a position to control events rather than becoming the helpless victims of them, and they would be well on their way to social health rather than being overwhelmed by a continuous series of crises and afflictions." (recorded in *Education and Peace*, p. 75)

We stand on the brink of several planetary disasters: overpopulation, starvation, depletion of non-renewable energy sources, and ecological devastation. In fact, people in many parts of our world are already experiencing these disasters in a very personal way. Yet for most of us in America, the wolf is only at the door, and we refuse to act. I wonder if we will be ready when he blows the door down? Yes, the children's 3 R's are the real core curriculum, and this must give us hope. Maria Montessori said, "Our goal is not so much the imparting of knowledge as the unveiling and developing of spiritual energy." (*Maria Montessori: A Centenary Anthology*, p. 47)

What constitutes "spiritual energy"?

Contemplate for a moment the wonder of the human being. Our brains, which are not terribly remarkable in appearance, are treasure chests of immense proportions. Do they contain our spiritual energy? Some people are talking these days about a *life force*, though they cannot isolate it in biochemical terms. There is even speculation that this life force is God within us. What I find particularly fascinating is the fact that new discoveries in physics and new ideas in theology are causing paradigm shifts in both disciplines. Science and religion seem to be converging.

Of course, the idea of a life force is not new. And Maria Montessori worked with this concept in developing her ideas. In describing "The Bulb" chart of the four planes of development, Mr. Grazzini writes: "A bulb, in other words, encapsulates the power of growth, of expansion – that is to say, the irresistible force of life. This leads us immediately to the idea of life as energy and to the idea of the child as the bearer of 'precious energies that tend to manifest themselves with irrepressible force.' " (The NAMTA Journal, Vol. 21, No. 2, Spring 1996; quoted passage within this passage is from a lecture given by Maria Montessori in 1951.)

Just for fun, let's play a game. When we lead elementary children to discover that there are various kinds of nouns in our language, we ask them to fetch abstractions for us. Let's play the abstract noun game for a minute (in the abstract, of course!). Think about where you can find these things: creativity, sensitivity, and devotion. I'd like you to bring these things to me on a golden platter, for they certainly deserve it. Go get them and bring them to me!

Even if you could shrink yourself and go inside another person, the task would be impossible, for at present we have no map for these human possessions. Even the finest neurosurgeon could not extract them for us. Yet we know they exist. The children know they exist, too, and will always try to bring one of their friends back to the lesson as the embodiment of one of these traits. They must be somewhere inside us when we are born, waiting to be developed. Think of all the admirable qualities of your friends and colleagues. Perhaps these are some of the fruits of spiritual energy or life force.

One of the pleasures of being a Montessori teacher, for me, lies in the awareness that I am working with the mystery of human potential. Although this paper deals with satisfying the spiritual needs, it is important to remember that our total human potential is even greater. We have only to look at the Olympics to see the glorious capabilities of the human body. And isn't it also true that the unity of body and life force is such that we cannot really separate them? Athletic skill is certainly not a matter of muscle mass and bone structure alone, but of determination, self-confidence, and many other components of a spiritual nature.

In an address to the UNESCO General Assembly in 1950, Maria Montessori said, "Not merely children, but young people as a whole are undoubtedly full of energy and resources, to which we have paid insufficient attention. We, who have always concentrated on the problem of teaching and transmitting our knowledge to young people, never seem to have thought that, conversely, we have so much to learn from them, so much of the hidden resources of human nature itself. We should be ever on the lookout for what young people, through their lives and activities, have to teach us in this way."

While in Bergamo taking elementary training, I remember feeling at a certain point that I had hit the mother lode, so to speak. Here was an educational philosophy which espoused authentic education. It calls children in the depths of their being to become themselves, to unwrap their personal and unique gifts and share them with the world. This opens up new possibilities for the teacher, too. Far beyond society's demands that we teach reading, writing, and arithmetic, we labor in the classrooms to help children become totally human. We wait and watch for new potentials to be realized in each child, and we nurture them. This is important, because children are not determined, not limited. Of course, adults are never totally determined either, but children are almost purely made of possibility, and the "hidden resources of human nature" to which Montessori referred, are the potentialities of children, the raw materials with which they construct themselves. They are the possible talents and character traits that spring from within, from our multiple intelligences, as well as from our will and emotions. Furthermore, a listing of them would always be incomplete at any point in time, because with each new human being there exists the possibility of a new big bang, a new and expanding creation. Children do not merely explode into reading. They explode into being!

Speaking of explosions, did you know that four years ago some scientists were able to determine the temperature of the universe when it was only a baby, i.e., when it was just 300,000 years old? They discovered that the hydrogen and helium gases were so glowingly hot that it would take them a billion years to cool enough to condense into stars. They were also able to determine that at that time some small temperature bumps existed which were one-thousandth of one percent hotter than other regions, which means that the universe was denser in some places than others. Robert Morris explains the importance of this discovery in his book, *Cosmic Questions: Galactic Halos, Cold Dark Matter, and the End of Time*: "Without such gravitational *seeds* the universe would never have contained anything but diffuse gas. If there hadn't been high-density regions when the universe was very young, then the present-day universe would have no stars, no galaxies, and almost certainly no life." (p. 6)

Could it be that the potentials of children are like these seeds of the universe? They may not be obvious or seem significant. They may lie hidden and undetected for a long time. If we want to help children fully experience life and become whole, we must continue to be vigilant in our observations, and we must continue to expect that more and more human potential will reveal itself to us.

Children enter our classrooms and our lives with all the potential necessary to make themselves into the finest and most whole people possible. What remains for us is to provide the work space and the periods of uninterrupted time for this fabulous construction to take place. And then, of course, there is another element to our nurturing their potential. We must provide aids, the ones suited to the age of the children.

The Path to Aiding Human Potential

In helping upper elementary children, it is important to remember three psychological characteristics they possess for aiding their self-construction. First, they have a ***reasoning mind***, an intellect that is no longer satisfied to know the facts of the world, but rather is hungry to explore how these facts are related and what their import or meaning is. Second, elementary children possess a great ***imagination***, which allows them to explore the world beyond their immediate circumstances. And finally, elementary children have a great ***desire for social interaction***, often called a "herd instinct," which allows them to explore the workings of society, both their own and the one outside the school.

Now let us turn to the practicalities of educating this human spirit. This may sound like an oxymoron. Is there any practical way to call forth the spiritual natures of upper elementary children? Yes, there is: cosmic education. Both the curriculum itself and its implementation help children to develop their spiritual energies. Of course, the children already have had three years of cosmic education as a foundation at this point. Let's review what this means.

Cosmic education really has two facets. On the one hand, it is the way in which we present the majesties and mysteries of the universe to the children. I do not mean to equate cosmic education with cosmology, although that is always a subset of cosmic education. Rather, the approach is ***holistic***, or cosmic, in its plan. The stories and lessons we present to the children concern all aspects of human knowledge, and they always give a vision of the whole. There is particular emphasis given to humanity. In *The Child, Society and the World*, Dr. Montessori gives us the following overview of cosmic education: "In the universal syllabus of studies to which the new generations must apply themselves, all the items of culture must be concerned as different aspects of the knowledge of the world and the cosmos. Astronomy, geography, geology, biology, physics, chemistry are but details of one whole. It is their relation to one another that urges interest from a center towards its ramifications. There is besides this the other part which concerns the directing of the consciousness towards humanity. The cosmic construction of human society must be the core of the study of history and sociology. How can we appreciate humanity if we do not consider first of all its merits, its creative efforts, its obedience to cosmic laws that have unconsciously urged society towards an effective union that today unites the whole of humanity in one vital aspect?" (pp. 111 - 112)

In addition to giving the cosmic vision of the inter-connectedness of all things, including humanity, a second aspect of cosmic education is its emphasis on the ***cosmic task*** of each living or non-living part of the universe. Beginning with the elements of the nascent universe, such as the sun, water, and wind, Dr. Montessori weaves a cosmic tale full of intense drama and pageantry. Each actor in this cast of billions makes a contribution to the whole. The corals and mollusks with shells save the seas from destruction by the overabundance of noxious calcium carbonate. The first land plants nobly raise their heads above water. Happy to breathe in all that delicious carbon dioxide, they are unaware that they are preparing the atmosphere for animals. The first voice on earth was not that of a human being. It carried over the aspirant sounds of the wind and the crashing waves. Who was this diva? The frog! Imagine her singing in the moonlight! The reptiles are the first great terrestrial crusaders, venturing far from their old swimming holes and inventing a hard-shelled egg to incubate their babies. These creatures all contributed to the advancement of life, although they were unaware of this fact. As the tale unfolds, another marvelous animal finally comes onto the stage, walking upright: the human being. These animals have an amazing brain, and because they walk on two limbs, they can use their hands. I wonder if these creatures have a role to play in the drama of the universe? Could they be like other creatures, making a contribution without knowing it?

Children who have come through our lower elementary program have had a taste of the whole history of the universe, and they have been introduced to the greatness and uniqueness of humankind. Let us then bring the upper elementary children to a new point of consciousness.

An interesting aspect of human evolution is that as a species, *Homo sapiens* has not differentiated to the point of creating new species, as butterflies, for example, have. While we have diverged to form races or subspecies, we remain as one interbreeding unit. However, *culture* diversifies us. Some of us have houses that are made of paper; some have sod on our roofs; some live in multi-level dwellings of glass and brick; others have dirt floors. Our burial practices include mummification, cremation, and burial under the floor of a cathedral. The ways in which we express ourselves vary from haiku to stream of consciousness, from impressionist painting to scrimshaw, from the music of a gamelan orchestra in Indonesia to that of a lone flute in Peru. Since the lower elementary children have investigated some of these differences, the point can be made with the older children that this is the point at which the Fundamental Needs Chart and the time lines converge. Our cultures are the way in which we continue to evolve. Dr. Montessori spoke these words in India in 1946: "And man himself, in building that which we call civilization, multiplied his powers to the point that he overcame all the limitations of nature and rose above the conditions that were his at the moment of his first appearance upon the earth. He to whom nature had given only two feet to walk upon, can today cross the earth by mechanical means which transport him from one end to the other, passing through continents as well as oceans and even through the wide spaces of the atmosphere. Human intelligence has become almost all-powerful and today has arrived at a point where it can dominate the energies of the world and penetrate the most intimate secrets of life. (*The Child, Society, and the World*, pp. 111 - 112)

Another aspect of cosmic education which we must continue to stress in the upper elementary is the importance of the lives of people who have come before us. Not only do we read and tell children the stories of great people, but we emphasize the contributions of countless others, whose identities we will never even know. Surely one of Maria Montessori's greatest gifts to elementary children is the profound sense of gratitude to humanity which arises in the children the day they truly understand our human legacy. "...An infinite number of heroes have struggled to render *knowledge* possible. All that we study today depends upon some individual discovery no matter how great or how small. There is no detail of a geographical map which is not based on the effort and heroism of explorers who for the most part remain unknown. The alphabet, writing mathematics, printing, and everything that forms the means of our culture are due to a series of efforts of individuals whose names in the majority of cases are forgotten. ... An ardent admiration towards this prodigious humanity must be the fundamental sentiment of the new generations. They must feel the pride and privilege of belonging to humanity. (*The Child, Society, and the World*, pp. 111 - 112)

Children who enter the upper elementary, having received the Great Lessons in lower elementary, know that the elements of the physical universe prepared the way for life on Earth and that many life forms prepared the way for us. They know about the invention of language and math. What then do we present to these children to strike their imaginations? More stories of drama and passion! We must sow all the seeds of truth that we can. The upper elementary is the time to capitalize on the knowledge and skills which the children have already attained in their previous three years of cosmic education. In her book, *From Childhood to Adolescence*, Dr. Montessori makes these suggestions, which I find to be particularly helpful in working with upper elementary children.

- ***Enthrall the child***

"When the child was very small it was enough to call him by name for him to turn around. Now we must appeal to his soul. To speak to him is not enough for this; it is necessary to interest him. What he learns must be interesting, must be fascinating. ...The interest increases in proportion to the gain in knowledge." (p. 36)

We, as teachers, can never stop studying ourselves!

- ***Appeal to the imagination and be precise***

"Imagination is the great power of this age. A configuration of reality must spring from the imagination. It is necessary therefore to be strictly precise. Exactness, as a numeral and as all that makes up mathematics, will serve to build that configuration of reality. Now what is it that strikes the imagination? Above all, grandeur and, next mystery." (p. 37)

Numbers, really large ones and really small ones, are useful in our tales of truth.

- ***Remember that the imagination is a creative force***

"Imagination was not given man for the simple pleasure of fantasizing any more than were the four characteristics common to man (language, religion, death rites, and arts) given to let him live on contemplation. Imagination does not become great until man, given the courage and strength, uses it to create. If this does not occur, the imagination addresses itself only to a spirit wandering in emptiness. Obstacles abound in the world. But man's spiritual life gives him strength to surmount them to accomplish his task." (p. 37)

Encourage the children to create. "I wonder what you could do with this information to make something or to share it with others?"

- ***Begin with a detail which can generate a whole***

"It is understood that one is obliged to begin by the study of a detail. But since nothing exists that does not constitute a part of the whole, it is sufficient to choose any one detail which will then become a point of departure in the study of the whole." (p. 40)

For more ideas of details to present, reread *From Childhood to Adolescence* and *To Educate the Human Potential*.

- ***Introduce philosophy***

"By determining the correlation between things with the child, and thereby obeying an essential impulse of the human mind, we create a philosophy for him. And why may not the child philosophize? Since the human mind is mathematical and philosophic, we try, in reasonable proportions, to turn it toward mathematics and philosophy." (p. 93)

A good source of stories about philosophy is *Sophie's World* by Jostein Gaarder.

9 - 12: The Golden Age of Intellectual and Social Exploration

Following Dr. Montessori's suggestions, it is possible to continue urging the older elementary children towards ever greater discoveries. In relation to the spiritual effect these discoveries have on the children, we must keep in mind this aphorism: *The greater the continent of knowledge, the longer the shore of mystery.* It seems to me that 9 - 12 is the golden age of exploration in intellectual and social terms. I can think of four reasons for this:

1. These students have the background of the Great Lessons given in the lower elementary, and they can begin to ponder their elements afresh as new details are added. What is the meaning of all these dramas?
2. They now have more knowledge with which to make connections among all the disciplines. Nine to twelves are consummate sleuths, and their detective work can be carried out in all areas of the sciences, humanities, and the fine arts. As they explore, and as their own individual talents and social selves emerge, the connections can be very creative and dynamic.
3. They have a larger vocabulary, more life experiences and therefore more capacity for humor, which is indispensable in the classroom.
4. They begin to gain a new perspective on themselves as human beings. They are better able to understand their responsibilities and to see themselves as proprietors of two minds: the freedom-loving, choice-making mind, *viz.*, our *will*, and the reasoning mind or *intellect*.

Ten Guidelines for Nurturing the Full Potential of 9 to 12 Year Olds

This is a list of things I have learned about helping children unveil their full potential. I have learned these things over the years, from my training, from the children and from other teachers, as I have attempted to implement cosmic education in an upper elementary environment. What I have compiled here is a kind of top ten "To Do" list!

❖ **Create an atmosphere of collaborative scholarship**

Help the children create and maintain an atmosphere of serious shared work in the classroom. An addendum to our 3 class rules says, " ... and work, work, work!" Children must know that the expectations for them are high. After all, they are human beings, and so they have great abilities. There is no time to dilly-dally during the work periods. The class should have a feeling of Santa's workshop, in the sense that there is excitement about the work and collaboration in accomplishing it.

A few years ago I taught my students the song, "The Wabash Cannonball," which is about a train. The next day, one boy brought to class four or five books, on trains. He immediately enlisted the help of a friend with well-developed artistic skills, and the two began working on a project on trains with the stated intent of writing about every train that had ever existed. For several days the reports poured forth, and then one day a blank tape showed up, too. The boys wanted to record their reports, first in Chinese and then in English. They also wanted to make a recording of the song as an interlude. The project was taking on the appearance of a grand eulogy for the American iron horse! They asked if I would accompany them, and if I would invite other children to sing with them, because they did not think a duet would be sufficient, considering

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the proposed length and serious nature of the report. Others did join in, and after the singing, another child joined their ranks on the report-writing! The next day another child brought her violin, and this led to rather intense jam sessions! One project can thus lead to others as the children's interest develops. The key word here is interest. We want the children to be more than curious about a topic. We want to foster genuine interest. One parent told me that while her daughter was doing research on the heart, she slept with her books at night.

Of course, there will be problems that arise, such as the wanderers. When children are wandering around the room, we sometimes respond with, "Where is your work? Go get to it!" In some instances this works, but often, more help is needed. I was amused by a cartoon I saw, in which the character was reading the instructions on a package of microwave popcorn. His response was, "Six minutes! Who has time for that?" We all feel this way sometimes, so it is necessary to remind ourselves that our real agenda is the children and helping them awaken their spiritual energies. A child who is wandering aimlessly is obviously not feeling energized and may not know why this is the case. Three opportunities present themselves to the teacher at this point:

- Take time to look the child in the eyes and talk to him.
- Invite the child to the next lesson you have planned to give.
- Appeal to the child's moral and social self. For example: "Maybe you can help me out. I see that you have been walking around the classroom. I haven't taken much time to observe today. Have you noticed anything that needs to be done in the class now?" Such a question can open the child's mind to the possibility of helping other children or making an improvement in the environment. Or it may simply stimulate him to choose some other work or to verbalize what the problem might be.

Sometimes a particular grouping is not mutually beneficial. Realizing that changes in social behavior are best affected by the children and not dictated by the adults, we must appeal to the children's reasoning minds to solve the problem. "It's 11:00 and I don't see much progress on your chart. What do you think is causing the difficulty?" The children will usually be able to define this, at least after some discussion. "Hmm, I wonder if any of you has a solution to this problem?" If no one does, it is incumbent upon the adult to ask leading questions until the children come up with an acceptable solution, whenever possible. Remember that we are not merely "dealing with" these little herds of children. We are aiding their social development. And group work is the great normalizer for children of this age!

◆ Build research skills

Since research is the basis of the upper elementary work, we must give careful consideration to the aids we give the children to do this work. Although the children have already been doing research for three years, it is still helpful to present a clear outline of the normal progression of the work.

Begin with questions. If the children are not starting their work from the history question charts or the biology questions, have them formulate their questions and at times even write them down. The point is this: the purpose of doing research is to answer our questions, not just to write a report. This does not mean that incidental information cannot be used, but it gives us a clear idea of the "hunt" we're going on.

Gather resources. Most children entering the upper elementary have been exposed to the idea of using more than one source to find information about a subject. For those who haven't, this is the time to get them to do so.

Teach the children to use the library or arrange for local librarians to conduct a thorough "tour." Encourage the parents to take the children to the library on a regular basis. With the amount of research that goes on in the upper elementary, this is very important.

In finding materials, children sometimes need help with synonyms or key words. That is, they may have a question about where an animal lives, but they don't think of looking up the words *range* or *habitat* in the index. Therefore it is helpful to review the children's questions with them and assist them in making up a list of key words to look up.

Also, as the children get older, they should get wiser about choosing their resources. When doing projects on recent history, for example, they should look for primary source material whenever possible. As more information becomes available over computers, it becomes even more important to read with a questioning mind and consider the source. Material that is available over the internet has not undergone the scrutiny of a publisher.

Use note-taking skills. Since the children may be interviewing people, they need to be taught how to write fast. Teach various kinds of abbreviations, e.g.,

a. symbols: & , # , > , w/
b. first syllable: gov. = government
c. initials: C.W. = Civil War
d. omit vowels: rdg. = reading

These abbreviations can be used when taking notes from a book also. Remind the children that they will have to reconstitute these words later, so "Don't abbreviate to oblivion."

Taking notes on slips of paper facilitates tabletop "word processing" later.

In our class, we use colored strips of regular-weight paper 1 1/2 x 8 1/2 inches.

While taking notes, children sometimes say they cannot write something in their own words. This usually has one of three meanings:

1. They are not imaging when they are reading. "Read this again, and this time I want you to try to form a picture in your head like a movie when you read!"
2. They don't know which words are important. Teach the children to look for "gold" or "glue." "Gold" refers to significant facts and ideas. We need to write down only the essential material.
3. They are not reading large-enough chunks. "Read at least two para-

graphs, close the book, and then write down notes. You can look back to see if you got those 'golden' words and numerals right."

Get organized and write the rough draft. When the children have finished taking notes, they organize the slips of paper into categories, which will become paragraphs, usually choosing a few notes with high interest for the introductory paragraph. They order the notes for each paragraph, and write the rough draft. We can help them further improve their writing by teaching them to develop topic sentences and use transition words effectively.

Edit before writing the final copy. It is important for the children to edit their own work as much as possible. To facilitate this, the teacher can use a margin code. Rather than writing on the child's work or circling mistakes, place a one-letter code in the margin on the line in which a mistake occurs. The child can then go back, look for the errors, and correct them. The following letters indicate mistakes of various kinds: **C** for capitalization, **S** for spelling, **P** for punctuation, **R** for run-on, **F** for fragment, **G** for grammar, **W** for missing, duplicated, or inappropriate word, and **?** for sense. After the child has made corrections, the teacher and child together can go over the editing before the child makes the final copy.

◆ Learn and use the magic words

The most powerful linguistic tool an upper elementary teacher has is contained in two small words: "I wonder!" These words appeal to both the child's reasoning mind and his imagination, and that is what makes them magic. There are several kinds of circumstances in which these words can be used. They are effective in prompting children to find a solution to a social problem, as well as in helping children realize there is more to discover in their research. Also, when a child is just about to reach abstraction with a particular mathematical operation or to arrive at a conclusion based on data he has been gathering in a science experiment, a simple "I wonder whether there is a pattern here?" may help the child to discover it.

◆ Encourage class self-direction through class meetings

The goal is for the class be self-managing. Weekly meetings allow the children to plan class projects and find solutions to problems they are experiencing. In our class a child decorates an area on the chalkboard with the word "Agenda" at the top, and the children are free to write any items below it that they wish to discuss at the next meeting. Next to each topic, the children who wrote it sign their initials. Then they are called upon during the meeting to discuss their ideas. The meetings are run by a president, vice president, and secretary who are elected by the children for a term of one month. It is productive to teach the children the basics of parliamentary procedure for conducting the meeting.

The children learn very valuable lessons from these meetings. Perhaps the most valuable are that group decisions are usually better than individual decisions, and that social harmony is a process. Problems are not always solved in one meeting. For example, basketball was a frequent agenda item this spring. There were concerns of gender bias, ability bias, referee bias, and players quitting. Over a series of weeks the children worked on these problems both on the court and during the class meetings. Some solutions were only temporary or led to other problems. However, the group process was very successful in generating solutions and trying them.

Usually very little adult intervention is necessary at these meetings. At one meeting this spring a child brought up the idea of playing tennis during recess. He had noticed that the high school tennis courts, which are adjacent to our playground are rarely used during our outdoor time. Several other children immediately dismissed the idea, saying that not enough children were interested in tennis, and besides the principal of the high school would never agree. There was a moment of silence, in which everyone seemed to be wondering whether the issue was dead. When the president announced the next agenda item, I asked if he was certain that all sides had been heard. He called for other ideas. The less vocal members of the group that wanted to play tennis finally spoke up, and eventually it was decided that they would write a letter and meet with the head of our school first. Within a week the children had their tennis courts.

The two most important aims in the class meetings are to hear all sides of an issue, *i.e.*, to be inclusive, and to focus on solutions rather than on the problems themselves.

◆ Be open to the possible

One of the things I have learned from being a Montessori teacher is to be open to the children's suggestions. I am much more ready to say "Yes" than I used to be. One group of children wanted to write a play this year based on the story of *The Twelve Dancing Princesses*. Naturally I wanted them to write, but I had a growing feeling that I should somehow redirect their efforts, because I wondered whether these children had the maturity to complete a project of such magnitude. A great deal of conversation during the morning work time was centered on casting the ten princesses (since twelve were not available) and what costumes they would wear. Finally I suggested that they complete the script at home. I thought this would be the end of it, but much to my amazement they finished the script and even invited a professional actor to come to the class to give them some acting tips. By the day of his arrival, the children had already organized themselves; they had chosen directors, created set and costume designs and memorized most of their lines. The effort was laudable, and I had not recognized all that potential!

Another thing I have learned over the years is that I need to be open to my own growth and potential for change as well. A few years ago, I became aware of the conversations I was having with myself on the way home from school in the car. They centered on all the things that had gone wrong that day, and all the things I had not accomplished. These thoughts were draining my energy, so I began to list all the things that went right, no matter how small, and I no longer allow worry in the car with me.

◆ Foster the class society, particularly through the fine arts

The upper elementary class is a society in which the children are practicing how to live together. Throughout history, people have organized themselves in order to meet their needs, both physical and spiritual. The goals of the upper elementary class community are similar, and so both economic and cultural work results from the filling of these needs.

Class Economics: Children like to do projects in which they can raise money for the class or for other people. For example, they have art sales and use the money to buy more art supplies or science equipment. Last year they charged admission and asked for additional donations to their production of *A Comedy of Errors*. These funds were sent to an organization which helps orphans in Romania. The process by which the children decide how to make money and how to spend it is, of course, as valuable as the money they raise.

Class Culture: Several activities come to mind here: art projects and performances. What we want the children to experience is a sense of belonging and contributing to a group. Activities in which the whole class is involved are therefore very important. Plays and musical performances are an obvious way in which everyone can take part. Those who may not wish to go on stage can work the lights or participate in a musical ensemble offstage. It is generally the case in our class, however, that a shy nine-year-old doesn't remain that way! Through putting on their own productions, the children truly learn the meaning of group effort, and there is almost no feeling that surpasses that of having taken part in some group project that was very strenuous – and succeeding! A tremendous amount of organization is involved in such a project, from figuring out how to block different scenes to preparing the playbill to setting up prop tables backstage correctly. And keeping everything running smoothly during the play is an art in itself.

Although the children do not usually produce whole-class artwork, with the possible exception of scenery for plays, they have a class "art gallery" outside the classroom in the form of a large bulletin board. They are responsible for planning the exhibits and for changing them. Sometimes they act as docents when the younger children come to visit the gallery.

Participating in musical ensembles is very important to upper elementary children, too. Singing is often a whole-class activity. By this age, there are generally some children who have decided they cannot sing and are tone-deaf. I will admit that I often fear this, too, in the same way that I worried over children who were not reading by age six, when I taught lower elementary. However, there is hope for children who have not learned to match pitches at this age, and that hope is built into our bodies. I have asked various groups of children this question, "What do you think is the most important organ in the body for singing?" The first response from a group of primary children was, "The heart!" and the first upper elementary response was, "The vocal chords." Actually the most important organ for singing is the ear. And luckily we have two of them. We must train ourselves to listen very carefully.

A few words about specialists: It is best not to have specialists. If possible, the assistant should be a native-speaker of another language. And as for the fine arts, we should teach them ourselves, with the help of guest lecturers. There is often pressure by parents placed on the administration to hire specialists. We need to support the administration in explaining to the parents the reason why specialists are not an "enrichment" to our program. What makes our program unsurpassable is cosmic education. However, we cannot offer it to the children if the work day is cut up into puzzle pieces.

The fine arts are particularly important to the social development of the children. The work that children are willing to do to "polish" a performance is truly impressive, and we must encourage the children to continuously improve their skills in music and drama production. This means that as teachers we must dedicate ourselves to continuously improving our own skills in the fine arts.

◆ Get the children out into the world through "going out"

Cosmic education cannot be accomplished within the walls of the classroom. If we truly want the children to understand human society and fulfill their potential within it, we must encourage them to leave the nest and start flying. Here is another opportunity to use those magic words. When children express interest in a particular field of study, we say, "I wonder if someone at the university knows about that? I wonder where we might go to get more information?"

Of course, going out is not about escaping the classroom, so children who do not exhibit a genuine interest in pursuing a particular study should not participate.

Children need very careful guidance in planning these outings. I often have the children write down what they will say in making telephone inquiries. "What are the first words you will say in introducing yourself? These are very important. What are the questions you have for the person answering the phone? Do you know the school's phone number and address in case he or she needs to get back in touch with you? What words might you say at the end of the conversation?" The adult driver or drivers should also be briefed about expectations and responsibilities.

Following these outings, the children can share what they learned with their classmates, and I encourage them to write thank-you notes. Several years ago the children even struck up a correspondence with a docent at a museum in another town, and several museum guides have said that they had never received such notes before!

◆ Model communication as a skill and an art

We all know the importance of language development in the first years of life. However, it is equally true that language plays a significant role in the lives of older children and adults. I know of a German professor who recently had a heart transplant. He had been waiting for over a year to have the surgery and had been in tremendous pain. When a friend asked him what kept him going during this time, he replied, "Grammar!"

Written and oral communication skills are essential for the human race. Among other things, language is the veil that separates us from violence. Therefore we must continue to teach the beauty and potential of language.

Foreign languages are particularly appealing to the children and help them really learn their own language. A few years ago, I began teaching Latin in the class, and the children were learning Spanish from my assistant. In addition, I had brought in German and French books, which the children were eager to try to read. One day a budding herpetologist and entomologist in the class asked me when I was going to bring in some Portuguese books. When I replied that I hadn't thought of that, he was completely dismayed. "Anyone who wants to be a biologist needs to know Portuguese, because most of the world's species of living things live in Brazil!"

An essential verbal communication skill to teach the children is to make "I" statements. Rather than saying, "You made me mad…," it is more effective to say, "I felt really mad…" Grace and courtesy lessons often spring from conversations that missed the mark. Imitate in a humorous way how not to communicate!

◆ Allow the children to do service work

Many upper elementary children like working in a primary or infant environment or in the school office. Their weekly forty-five minute session helps them connect with the school community and see what an adult's job actually entails. After talking to the teachers of the younger children and the office staff about possible positions, I ask the students to fill out a job application, stating their qualifications for the service and the reasons they would like to do this work. We post a schedule of these weekly jobs, and the children are responsible for getting to them on time.

◆ Recognize that joy is the ultimate response to existence. Celebrate!

Celebration is an absolutely essential part of our jobs, and it can happen spontaneously as a response to our feelings or thoughts about life. What we want to do is celebrate with the children what it means to be human, and thus aware.

Sometimes the children break into song spontaneously. At other times, when it gets dark outside as a storm approaches, the children often ask to turn off the lights and read a scary story. We light candles and "huddle" together around the lights and the words. This has become almost a class ritual!

This spring on a trip "up east" the older children and I sat beside Edgar Allan Poe's grave at dusk to read one of his stories and a poem. This may not sound like a celebration, but there was a feeling of connecting to something elemental in human emotions there. Children at this age are beginning to philosophize, as Montessori said. They want to think about what constitutes *evil* as well as what qualifies as being *good*.

Sometimes celebrations can be planned, and often they can come together rather quickly. For example, Dr. Montessori's birthday, U.N. Day, Earth Day, and the equinoxes, (and the winter solstice, if school is in session then) can provide a cause for a celebration.

This past fall, the equinox arrived with fog and cool weather, which prompted a response. With a mere suggestion to the children that we could do something to mark the day, they began to search for poems and learned a short song to which they added rhythm instruments and bells. We found some material in the closet that reminded us of fall colors, and the children made headbands and wrist- and ankle-bracelets, to which some children attached hastily-strung garlands of fall leaves. Several groups of children became troubadours and made arrangements to share this five minute celebration around the school. On other occasions we have gone outside to get more familiar with the trees, danced ourselves in and out of spirals, and lay down to gaze up at the leaves and sky.

Concluding Remarks

The life of the children in the upper elementary is built on shared experiences. This means having the opportunity to work on a common research question, to ponder the meaning of a piece of literature, or to test a hypothesis by designing an experiment. It means coaching one another on facts or lines in a play. It means figuring out how to gather information and arrange trips. In short, it means learning together what the human mind and spirit are capable of doing.

The social aspect of this work is its hallmark. What we are really nurturing in these children is personhood rather than individuality. An individual is distinguished by being set apart. A person, however, assumes an identity through relationships with others.

On a recent trip to Charlottesville, Virginia, with the oldest children in the class, I was struck by this irony: Thomas Jefferson was the principle author of the Declaration of Independence, and yet he borrowed money to buy slaves. He came to believe that slavery was wrong. Yet he was unwilling to free his own slaves, feeling that he treated them well and knowing the extent of his debt. He expressed hopes that the next generation would solve the problem of slavery.

Freedom and responsibility enjoy an interesting relationship. Maria Montessori realized that we cannot become responsible unless we are free, and we cannot become free unless we are responsible. What we want for all children is that they develop both. We want them to realize their full potential to be free, and we want them to realize their full potential to be responsible. The ultimate responsibility lies in making free choices.

There is a school of thought about systems theory which says that living systems are self-organizing or autonomous. This notion presupposes that life is inherently creative. By continually creating newness, life evolves. This idea of self-organization can be applied to different levels of life, e.g., to cells, to a family, to society, and to the Earth itself as a living system.

To the upper elementary children who are very social creatures, we present cosmic education, and we hope they come to learn that humankind is not a mere parasite on the planet. Is it possible then to marry the ideas of cosmic task and self-organization? Humanity is the most powerful cosmic agent. As a living system, could we also become the most self-organized, the most creative?

Considering the fact that we have consciousness, what are the possibilities? Thomas Jefferson, who gave birth to the American ideal that all men are created equal, was himself not able to live up to this ideal. Could it be that none of us can achieve our full potential without others? Don't we all have to act together to realize our cosmic task?

If we were to choose ten people to build a house, it would be best not to do so randomly, for what would happen if none of them were carpenters or plumbers? In our world we have great diversity of people and cultures, yet we have not recognized the tremendous potential present in that diversity. As a global society we must learn to integrate and network. We are the caretakers and horticulturists of the world, but we must all work together, recognizing the particular gifts of each one of us to help our garden grow.

As children work together in our upper elementary classes, they begin to recognize their personal strengths and potentialities, and they also have the experience of accomplishing a group goal through serious group effort. This can be a significant and life-shaping experience.

One thing still evades the intelligence of humanity and that is the consciousness of their terrestrial destiny and of the fact that the whole of humanity is so intimately united that it forms but one organized energy…

From the extreme dangers of our days the vision is born of the necessity that men should with their conscious will and with their sentiment, seek to find the *adaptation* to present conditions, thus forming one universal harmonious society. This is the aspiration to which today humanity clings, urged by the supreme appeal of seeking its own salvation. But how to attain this if not through a *direct preparation* of the new generation, i.e., through education? (*The Child, Society and the World*, pp. 109 - 110) ◆

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Building the Elementary Program and Transitional Program Strategies

Peter Davidson

In the Spring '95 *NAMTA Journal*, David Kahn presented a model for looking at the evolution of a school in a way similar to that of an individual. The expansion of a school to include classes for the elementary years was noted as a significant plateau in that evolution. I would add that the addition of many elementary programs to an already thriving nationwide community of primary programs is a significant step in the evolution of the Montessori movement in the U.S. as a whole. I have been asked to speak on behalf of that expansion, to define its importance to a school and to describe means for making such a transition feasible. In so doing I speak not as an expert, but from my 16 years of administering our school as it evolved from one primary class of nine students to a six classroom school serving 170 students from age three through twelve. It hasn't been easy, but what worthwhile endeavor is? Certainly the benefits have far exceeded the difficulties.

You may ask yourself, why expand into elementary at all? If you, your board and staff have realized first-rate children's house environments, why add a new layer of complexity to an already daunting task? The answer is that after three years of effort, yours and theirs, your graduating five-year-olds deserve an environment that speaks to their needs, responds to their curiosity, and allows them to continue to fully exercise their wills, skills, concentration, self-reliance, respect for others and joy of learning. To offer them anything less seems a waste.

It is because the nature and characteristics of the child change that we need a different but no less carefully prepared environment. Any primary teacher will tell you that toward the end of their third year in the class, children change. The teacher begins the year wondering what she'll do without little Jason or Nicole when they graduate, but by springtime, is quite ready to let them go. The cooperative, angelic, careful child you could always count on to model gracious and courteous behavior has been replaced by this loud changeling who questions the limits and chafes at the very nature of the primary environment. Their capacity for work does not diminish, nor their joy in it; but they need bigger projects, a broader horizon, more opportunity to work out their social relations, and to know the "whys" rather than the "whats" of this bigger world.

Whereas the Montessori primary must take into account the sensitive periods and absorbent mind of the first plane, the elementary must stimulate the imagination, challenge the reason and allow expression to the developing social being of the second. The great lessons stretch the child's imagination to the farthest reaches of space and time. The cooperative nature of the work and the safe forum offered by class meetings acknowledges the development of the social being. The materials and approach call for the consistent use of reason, thought and judgment, both in exploring the universe and in evaluating one's own performance. The curriculum does no less than challenge each child to discover his or her cosmic purpose: their contribution to their family, their society and their world.

It's not that children won't survive without Montessori elementary, but that a great opportunity is lost.

About a third of our students go to a traditional first grade after Montessori primary, but many of them come back after a year or two. The parents give various reasons for their dissatisfaction with traditional school: boredom and lack of challenge, rude classmates, etc., but in their more articulate moments, one metaphor emerges again and again. "I brought Emily back because I saw the light (fire, spark) going out." It is my belief that the greater the opportunity children have to build their foundation, strengthen their character and give reign to their true nature, the stronger and more inextinguishable that fire will be.

I don't think children ever really lose that spark even if circumstances take them away from a Montessori environment after their kindergarten year. I do see, however, a tremendous strengthening which occurs as a result of exercising will and natural love of learning on ***the conscious level*** operating in the second plane.

I don't recommend that people ask their children what school they want to attend at age five, but the experience of one parent who did makes for a revealing story. Her five-year-old chose to go to the local public school. After a few months the mother observed that her daughter wasn't thriving in the new environment, and put the choice to her again. In true Montessori fashion, little Maegan asked if she could retire to her room to ponder the question and list the pros and cons of each situation. After a few minutes she returned and announced that she'd like to go back to Montessori. When, a few hours later the curious mother came upon a sheet of paper in her daughter's room, she saw that Maegan had made two columns. The one on the left was headed "good things about public school" and the right "'good things about Montessori." The left side included such things as cafeteria, school bus and tetherball. On the right was but a single word: ***work***. Needless to say, we found room to take this little girl back (and also – needless to say – I erected a tetherball

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pole that weekend).

What we allow in Montessori is the opportunity for children to do their work, and no nobler or more significant task exists. This is the number one reason to expand into the elementary years: to let children during this time of unparalleled intellectual and social capacity simply do their work.

There are other benefits to offering an elementary program as well. It strengthens the commitment of the parents. Part of this is due, I think, to the greater seriousness with which parents tend to regard elementary education, but partly also to longevity. Sometimes a person must hear the same truth over and over again before it finally starts to sink in. Without an elementary program it's not just wonderful children you lose after your years of hard work, but their parents as well. It's not until their oldest child is five or six that most parents in our school really understand Montessori and become invested in the school. Once they are involved on that deeper level, they do more to support fundraising and show a greater commitment to annual giving.

The presence of an elementary class can strengthen the entire program from top to bottom. No longer are you a "pre-school" preparing children for public school first grade (and perhaps losing a healthy percentage to public school kindergarten). Primary teachers present the advanced work with renewed enthusiasm knowing that the children will be allowed to use their skills the following year rather than putting these interests on the shelf until some later grade when the traditional curriculum gets around to it. Teachers are inspired to present **all of their albums.**

Of course there are inherent problems with expansion into elementary as well. It is not so much like adding another class as adding a new level of complexity, parent concern and staffing difficulty. Judging the right time to expand is also difficult. Schools that expand too soon or too quickly can suffer setbacks in program quality and financial stability from which it can take years to recover. Still it is a worthwhile venture, and one that can safely be navigated with careful planning and foresight.

It has often been said that there are three main ingredients to a Montessori classroom: the environment, the guide, and – most importantly – the children themselves. To this list I would add a fourth ingredient: the parents. To develop a successful strategy for expansion, one must carefully look at each of these factors.

First, the environment. It has been my experience that elementary children need more space: more than 50 square feet per child as opposed to 40 for the primary. There are also some different kinds of spaces required both within and without the classroom: big spaces for spreading out big work; private nooks for the settling of differences, or the casting and organizing of a play; sinks, counters and cooking areas for snack and meal preparation and science experiments; a large outdoor space for exploring nature, for imaginative play such as building shelters or carving microcosms of river systems.

The cost of equipping this environment is roughly comparable to that of equipping a primary though not all of it need be purchased at once. Depending upon how quickly your program grows, you may start out with the teacher's handmade materials and certain key books and Montessori apparatus, collect what you need for practical life and experiments, and add new equipment as your group matures and requires it.

Finding the second ingredient, the teacher, can be a greater challenge. I chose not to begin an elementary program until I had just the right, fully-qualified person in hand. The first teacher is critical to the program's success since he/she not only provides the environment for the children but becomes the very embodiment of Montessori elementary to your parents and community.

We're just beginning to close the gap between demand for trained elementary teachers and the supply. Supporting AMI, your nearest training center and sponsoring trainees may be the long-term solution. In the meantime you'll need to network tirelessly, advertise and then hope that you can attract the right person. The quality of your work environment as dictated by your level of philosophical integrity may be the single most attractive quality of your program to these very committed and idealistic individuals.

This brings us to the most important factor: the children. If you have done your job, you should have a group of children with three years of primary who are ready to take full advantage of the rich opportunity a Montessori elementary environment offers. In my experience, however, unless a good 90% of your elementary class have this strong Montessori background, it will be difficult for the teacher to allow the kind of freedom that a successful Montessori elementary demands. This may provide a nice alternative to public school but falls far short of what Montessori can offer.

Projecting enrollment can be very tricky in those early years. Be prepared for a sizable margin of error and the resultant lean year or two until you become established. It is important to resist the temptation to accept a higher percentage of children with no Montessori background just because they are paying customers. The short-term financial gain must be measured against your responsibility to those children and the class as a whole, as well as the risk of teacher burnout.

Historically, it has taken 2-3 primary classes to support enrollment in one elementary class. The typical elementary start-up class probably consists of 7-10 six-year-olds and ideally some seven-year-old transfers from a Montessori elementary in another town (or possibly children returning after a year of public school).

Our strategy was somewhat different. For one year we had a larger, team-taught primary class and invited children who would have "graduated" to remain. This allowed us to start our lower elementary a year later with six and seven-year olds as well as a few eight-year-old transfers. This three year age span proved a great boon to the teacher in that first year and a boost to the program as a whole.

We've used a similar strategy successfully when expanding the number of classes or levels offered and have had the additional benefit of accommodating several teachers who were new mothers and didn't want full-time responsibility for a classroom for a year.

This leaves but one ingredient for successful expansion into the elementary to discuss: the parents. Primary parents are impressed and surprised by their children's acquisition of skills, knowledge and self-confidence. When their child turns six, however, they begin to have performance expectations in earnest. Parents have much more detailed recollections of their elementary years than of preschool and that familiarity, in this case, breeds comfort rather than contempt. Despite their protestations to the contrary, in their heart of hearts parents often find traditional methods and curriculum comfortable and quantifiable while Montessori asks for faith. As a result, well-meaning parents can unwittingly sabotage an incipient Montessori elementary program. Both teacher and administrator must resist pressure from the parents and even from within themselves to compromise Montessori with workbooks, testing, homework, specialty classes, etc. that interrupt the children's work cycle.

As I learned from little Maegan many years ago, the special gift we offer the child is this chance to work. ◆

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Practical Applications of Montessori in the Home

M. Shannon Helfrich

As most of us who are parents of children in Montessori programs discover, our children can teach us a lot. Children who have developed new skills and made new discoveries have a great desire to apply those skills and discoveries in their everyday life. In fact, all of their life is one comprehensive whole within which they exist. All skills and knowledge become a part of their evolving personalities. The challenge for us, as parents, is to provide an environment within which these children can experience continuity and support for their growth and development.

It is important to begin our discussion with a few clarifications about what we can't attempt to do at home. First and foremost, we cannot recreate the Montessori classroom environment in our homes. Our homes are places designed to accommodate the needs of both adults and children. The Montessori environment is designed specifically to meet the needs of a defined group of children, as such, the Montessori environment consists of more than just a willing child and a set of "neat" teaching materials. Even more so the child cannot learn from the materials through mere exposure. This could be likened to sitting in front of a locked box without a key. In the same vein, the trained Montessori guide acts as the key to unlocking the box. S/he is the professional prepared with an understanding of child development and the nature and design of the materials through which they can meet the developmental needs of the child. In addition, a true Montessori experience includes the social dynamic of the child interacting with children of other similar ages – older children there to assist and to be models for the younger children; younger children learning through observation of older children and gaining a vision of the work that is yet to come in their life experience.

So with this said, what can we do? There are many aspects of the Montessori philosophy of life that can be applied to our life with children. We might call these philosophical attitudes. These could include such attitudes as: 1) respect for life and nature's built-in pattern for unfolding development, 2) a friendliness with error which allows us all to acknowledge our human frailties and developing levels of skill, 3) the freedom to use all the skills and capacities we have even though they may not yet be perfected, generally called functional independence. Any or all of these three can provide a basis for our relationship with our child. They are attitudes used to create a psychological environment for the child.

Let's look at these first. Respect for life can translate into speaking to our child in a respectful manner, avoiding phrases that demean or undermine the budding self-esteem. It can mean listening intently to the child's communications and responding in ways that stimulate a true dialogue with the child. The young child is just learning the intricacies of personal communication and delights in practicing these skills with anyone they meet. Through our communications, we can be sensitive to providing a language rich environment. Children delight in knowing the names of all the objects they encounter in daily life as well as the vocabulary used to describe activities and processes they are engaged in. Specific and accurate vocabulary is a true gift from us to the child.

Friendliness with error is a challenge for all of us. We are programmed to expect something close to perfection within ourselves and in those around us. However, if we really observe our child, we see modeled for us a great acceptance of error as a natural part of life. Think of the young child just learning to walk – do they give up if they lose their balance and fall? Do they stop practicing walking because they aren't too secure in this skill yet, or do they persevere with a tenacity that astounds us? This same attitude of persistence exists for all challenges in the life of the child. It is only after experiencing the negative recriminations after making a mistake that children develop an attitude that mistakes must be bad, something to be avoided or covered up at all costs. This does not imply that we can't assist the child in developing his/her level of skill, but this can best be done through modeling specific movements for the child. In dealing with the inevitable consequences of error (spilled milk, wet pants, etc.), we best serve the child by calmly and respectfully providing the help to resolve the problem. (A sponge, a dry set of clothes.)

Freedom to apply newly acquired skills, freedom to act on one's own behalf is the battle cry of the young child. I have two posters that I like to put up during the year for my students to ponder. One says, "Help me to do it by myself" the second says, *"as soon as independence has been reached, the adult who keeps on helping becomes an obstacle."* Stimulating and encouraging functional independence is an essential aspect of a Montessori approach. This brings us to the part that most of us really came to hear. What can we do at home? I will share with you some applications that I discovered in life with my own son, who is now 12 years of age. But I firmly believe that all of you have a wealth of collective wisdom from which we can all benefit. A good way to assess what we can do in our homes is to go room by room, deciding on those adaptations or accommodations that we feel comfortable with and that are consistent with our family situation.

Let's begin in **the child's own bedroom**. Here are some examples of things you can do simply and without much cost.

- Allow children to dress themselves even when clothes don't match and aren't lined up exactly. It is important in terms of clothing, to choose items that lend themselves to independence. Think of the type of and positioning of fasteners and whether this allows your child to handle them independently.

- Arrange clothing in drawers so it is accessible to the child.
- Provide a sleeping place that allows children freedom to lie down and get up as they respond to their own needs.
- Place a rod low in the closet to encourage the child to take responsibility for hanging up their own clothes. This also allows the opportunity for the child to apply skills with a variety of fasteners found on clothing.
- Provide hooks for coats, sweaters, and jackets as an alternative, so the child can be independent.
- Placing the child's toys on a long shelf instead of in a toy box. One of the important characteristics of the young child is a love of order. This is best described by the statement, *a place for everything and everything in its place.* This sense of external order provides a basis for security of the child and is also the basis for the development of internal mental order. This is very difficult to do with a toy box. It can also be very discouraging for a child to not be able to find the objects of desire within the chaos of the box.

Now let's move to the **kitchen and eating area**. There are a great variety of activities that the child enjoys.

- Use smaller sized utensils (pitchers, serving pieces, plates, glasses, etc.) to allow the child to be independent in pouring his milk, fixing his cereal, serving his own food.
- Allow the child to participate in the life of the family at a level appropriate to their age and skill. It isn't always the most efficient or tidiest manner to set the table, wash and peel the carrots, or do the dishes, but participation by the child helps them experience a sense of community through actively contributing to that community.

What about the **common living areas**? How can we allow the child a way to be near the other members of the family and feel like this is their place too? Having books, puzzles and simple games that are either solely for the child's independent play or interactive with other family members can provide ready activities. Some parents feel a need to "child proof" these common areas, yet most children readily learn to handle art pieces, and special books or artifacts with respect when this proper handling is modeled for them. It inspires them to control their movements.

The **bathroom** also lends itself to independence. A small secure stool serves as a platform for children at the sink or the toilet. A towel hung low enough for them to easily reach encourages the washing and wiping of hands.

Even the **outdoors** can be a space in which we apply a Montessori approach.

- Allow the child who can walk, to walk, but acknowledge and adapt to their pace.
- Provide small easily accessible gardens or planter boxes so the child may participate in simple gardening activities. This also necessitates attention to the size of the gardening tools. Many companies now make child sized implements meant for real activity.

These ideas just scratch the surface of the ideas of things that can be done. The bottom line is to always be sensitive to the developing skills of the child. From very early on in life, the child desires an active participation in life, especially the life of the family. We, as parents, are the most important facilitators and models for the child. Our homes can be places wherein the child feels comfortable, accepted and supported in their process of growth and development. ◆

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Conflict Resolution – An Approach to the Resolution of Conflicts in a Positive Way

Silvia C. Dubovoy

During the past decade an important part of human relations and organization development training has been "win to win" conflict. The purpose of this training has been to deal with interpersonal differences in cooperative and collaborative ways so that mutually acceptable solutions can be developed and no one will "lose". This is very difficult to achieve because it seems unnatural for most people. Human beings have been conditioned for years to react to conflict situations as battles to be won rather than as problems to be solved.

Montessori believed that battles start with the repression of the child's development by the almighty powerful adult. Conflict starts with the struggle to "teach" the child what is "good and bad" behavior in a battle between the strong and the weak. In Montessori's words: "When we...studied the newborn child... We were deeply moved at the discovery of a real and awesome conflict, a ceaseless war, that confronts the child from the very day he is born and is part of his life all during his formative years... The adult defeats the child; and once the child reaches adulthood the characteristic signs of the peace that is only an aftermath of war – destruction on one hand and painful adjustment on the other – remain with him for the rest of his life."[1]

Socialization in the world is based on competition, winners are rewarded and losers are punished or ignored. It is very difficult for adults to turn off the win-lose competitive attitude when faced with conflicts even though they have seen that, in a prepared environment collaboration is much more fruitful.

Today we encounter the words "conflict" and "resolution" everywhere. There are workshops, books and conferences on this topic. Conflict is not a simple aspect of life; as a matter of fact it is a very complex one and one that occurs frequently. However, I truly believe that if we deal with the very essence of the conflict in a very factual and open way, conflict can be treated positively.

It is my intention to explore the process of attempting to resolve conflicts through self-understanding and dialogue with others. An open mind can constructively address differences, inequalities and diversity, while committing itself to personal integrity in every aspect of life. We cannot avoid problems but we can learn to solve them in a positive way for all involved.

There are four main aspects to consider:

- What is conflict?
- How you can approach it;
- What to do in the face of conflict, and
- How to understand and resolve a conflict in a positive way.

It was through my work with Carl Rogers that a deepening and understanding of the nature of conflicts came about. He was extremely interested in this topic, not only as a psychotherapist working with patients within the person-centered approach, but in conflicts among large groups and communities with respect to religion, ethnic and ideological differences. He was also involved in many other situations which were a blend of hate, bitterness and death.

During my work with Carl Rogers in different settings, there was always a point at which people who hated each other were able to talk and understand each other's views or positions. This special aspect was always called forth by a personal dialogue which involved their children. By also being involved with Montessori education, it was easy for me to see the power of children in changing attitudes. Situations and the resolution of conflicts was seen as a growth experience and a part of the process of becoming a person.

In many ways I think that Rogers has been for adults what Montessori has been for children. Both knew the importance of a prepared environment in which respect for the personality of the other was the main object of their education. Acceptance, empathetic understanding and unconditional love were the necessary conditions for the adult to learn about herself/himself. These same aspects are conditions for the possibility of a child for self-construction.

As we know now, Dr. Montessori, in her knowledge and understanding of the *secret of childhood*, was much ahead of her time. Her book, *Education and Peace*, explains with an extraotdinary insight, how children learn war very early in their lives. War and conflict start between the adult and the child, between the strong and the weak, and I quote: "No new understanding of the many changes in the human situation that are unfavorable to children has penetrated the minds of mature human beings. The age-old, superficial notion that the development of the individual is uniform and progressive remains unchanged, and the mistaken idea that the adult must mold the child in the pattern that society wishes still holds sway. This gross, time-hallowed misconception is the source of the primary conflict, even war, between human beings who by all rights should love and cherish one another, parents and children, teacher and pupils."[2]

The situation is much more serious today than at any time in the past. The confusion created by all kinds of disciplinary methods and the absence of guidelines, has increased the damage on the children of today. The lack of understanding between freedom and discipline in parents and even in society, has created a chaos in the manner children, adolescents and adults behave in their lives. Conflicts are much more painful and damaging than before.

What is conflict?

In books and dictionaries, conflict is usually associated with problems, fights, pain, fear, destruction, loss, controversy, disagreement, hate and war. It has always been seen as a negative occurrence. It brings a breakdown in communication and carries suspicion and mistrust. When conflict appears, perceptions about the other person or the situation are distorted, as a way to cope with the problem. There is a rigid conviction and belief in each one of the parties involved that "I am right and you are wrong".

Many times hate, envy, jealousy, need and desires are the cause of conflict, which originates because of them. It happens because people differ with one another over a small or large issue. When power is involved there is punishment and even killing. Conflict manifests itself as pride, anger, ideological/ethnic differences, generational gaps and points of view. The adage "if you want peace prepare for war" gives an idea how people are ready to fight to achieve peace.

Conflict itself resolves the tension between contrasts. It is a way of achieving some kind of unity, even if it be through the annihilation of one of the conflicting parties. As an analogy, it is like a violent symptom of a disease which represents the effort of the organism to free itself of disturbances and damages caused by them. It is designed to resolve divergent dualism.

In other terms, conflict could be seen as the force created by two contradictory psycho-emotional interests. It is the opposition of mutually exclusive impulses, desires or tendencies, within oneself and with others. It is an outgrowth of the diversity that characterizes our thoughts, belief system, goals, motivations and expectations. Therefore, conflicting differences in values, needs and emotional disposition can be regarded as natural events that break the order. When a conflict appears it is unavoidable and it can bring back order into our lives.

People are different in fundamental ways. All of us want different things; we have different values, needs, ends, expectations and impulses. And of course, our behavior and attitudes are guided by our wants and beliefs. However, we want to make all those nearby, especially the children, just like ourselves.

Man has to create a balance between being alike and being different. In some way man becomes human by living among human beings. He needs to adapt to the time, place and culture in which he is born. Freud called it "civilization and its discontents". At the same time, being different is the child's way of being psychologically born. For the child to have his own will is equivalent to have his own self. He constructs himself and separates from his mother to establish his own individual identity.

While the child is growing and creating himself he struggles for his independence. This struggle is the main element in the process of separation that breaks the order established by the adult and with it brings conflict. Conflict is not an event but a process. Differences bring conflict when we try to mold the other into our own likeness. The child's personality can be distorted and deviated and all involved pay the price with more problems sooner or later. To attempt to change an adult is an impossible task. The blueprint, the pattern on his/her personality, is established in the first six years of life.

If we take this idea into consideration we may see that conflict can be seen as a positive aspect of a relationship, that is, if we can accept our differences and their validity for both parties. We need to learn how to approach a conflict, to take it as a sign and symptom of attention and as a learning opportunity about ourselves and the other.

A natural way to engage in a conflict is not to win, but to understand, to collaborate and to create a better relationship together. **We come into conflict with others because of parts of ourselves that we, like the opponent, are unconsciously upset about.** Everyone concerned must consider the conflicting sides as two inner parts of themselves that are asking for an individual resolution.

When the conflict is approached and processed correctly, it may be an opportunity to achieve greater awareness, intimacy, self-growth, true peacemaking and community. Conflict can be a dance of energy to restore order. A conflict cannot always be fully resolved; time has to help its resolution.

How can you approach it?

In a workshop which was held at a conference by the Association for Humanistic Psychology in San Francisco about twenty years ago, Jordan Paul, Ph.D. and Margaret Paul, Ph.D. presented a diagram with the *Paths through Conflict* which made a deep impression on me. Some years later and after many workshops with many good ideas, they published a book in 1983 called *Do I Have to Give Up Me to be Loved by You?*,[1] which has been a very popular book. Having attended the workshop and worked through my notes, I studied and analyzed that very first diagram to see how it could be useful in any kind of conflict. It is extremely useful and I decided to use part of it to show you how you can approach conflict.

There are two ways to approach conflict: positively or negatively. The negative form comes from an intent to protect yourself against pain and fear. A person can become closed and avoid personal responsibility for feelings, behavior and consequences. This path takes three attitudes: indifference, control and compliance.

When you choose to be indifferent, you withdraw from or resist the relationship physically and emotionally.

In control, there is an attempt to try to change the other by means of disapproval, or by instilling fear or guilt.

With compliance you give up yourself out of fear of disapproval or conflict.

By choosing any of these attitudes the

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consequences are very damaging because they bring distance, power struggles, pain, fighting, boredom, lack of fun and joy, deadness and a feeling of being unloved and unloving. The conflict is not resolved and occurs again and again using different protective circles, meaning that both persons involved in the conflict choose behaviors such as: indifference / indifference, in which both persons can be together but they ignore each other; control / indifference, in which one person tries to control and the other is indifferent; in control / control, both persons fight for the power to control each other, and the last one is control / compliance, when one person uses all his power to control and the other complies out of fear or pain.

This protective path comes from childhood when we are expected to choose between being oneself or being loved. Parents and teachers manipulate children, consciously and unconsciously through love: "If you do what I want, I love you; if you don't, I don't love you". It seems easy to escape confrontation and avoid pain through the negative attitudes.

However, there is a positive way to approach conflict: when a conflict appears there can be an intent to learn from it. One can resolve to be open and non-defensive and to assume personal responsibility for feelings, behavior and consequences. By being open and non-defensive, you learn truths about yourself and about others. There is a process of exploration in which you have to be willing to suffer temporary pain or fear brought about by the gained knowledge of your true self and that of others. The exploration can take you to different areas such as your childhood, reenact fears, expectations, protections and responsibilities. The consequence of a creative and constructive attitude towards conflict can result in positive and loving relationships and in personal freedom and growth.

In this manner, conflict can be seen not as an event but as a process that continues all through our lives. In each conflict there is always an educational value. Nature creates differences, misunderstanding and lack of knowledge create conflicts.

What to do in the face of conflict?

There are some steps that I was able to observe during the confrontations in groups while working with Carl Rogers and that might help you towards a positive, open and non-defensive approach to conflict:

- ***Develop the ability to listen actively.*** This is one of the most difficult parts because you need to get rid of preconceived ideas, judgments and be free of anger, resentment or hostility to really be able to listen to the other.
- ***Acknowledge feelings without blaming or demanding.*** Recognize your feelings and the feelings of the other with an attitude of acceptance. An authentic and clear acceptance of the other. "I accept you as a person although I disagree with the action."
- ***Find common points of agreement.*** Look for that human essence that is common to all. In my experience, whenever two people who were against each other talked about their children or personal intimate issues, they were able to meet on a different emotional and affective level.
- ***Use "I" statements.*** In conflicts, most people tend to blame the other. "You..."
- ***Try to avoid the past.*** Circumstances might have modified the conflict and if we refer to the past, the process of growth might be impaired.
- ***Bring out the situation or action, never the person.*** The other has a chance to save face, to recognize a mistake or to accept responsibility.
- ***Find alternatives together.***

How to understand and resolve a conflict in a positive way

The first conflict that we have is within ourselves. There is a conflict between our needs and our desires. We manipulate ourselves to believe in things that we think we need or desire, based on social influences. Conflict arises when our wishes, needs and desires conflict with those of others. We are desperately looking for freedom to do what we please and do not know what we want or are able to do. Conflict needs to be taken as a message to understand ourselves and others.

In many ways, we come back to a Montessori statement on freedom and discipline. We are free to make our own choices with responsibility and discipline. Self-control and self-knowledge offers the opportunity to understand ourselves and others.

Conclusion

In conclusion, I would like to emphasize that conflict offers the opportunity to learn from oneself and from others. If you choose to understand rather than avoid conflict, then it becomes useful as a doorway to both self-discovery and community. When we approach it as a learning experience it acts as a prime motivator for positive change and growth. When we are non-defensive and open to conflict the shift in our behavior and attitude is no longer destructive, but creates an atmosphere of acceptance and understanding that fosters a different outcome. ***Conflict is a key to opening a road into ourselves.*** ❖

Footnotes

[1] M. Montessori, *Education and Peace*, p. 15.

[2] M. Montessori, *Education and Peace*, p. 16.

[3] Paul, Jordan & Paul, Margaret. *Do I Have to Give Up Me to be Loved by You?* Minnesota: Hazelden, 1983.

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Parent Conferences and Communications

Carla Caudill

This presentation germinated from requests of teachers and administrators for help with parent conferences and the area of "parent education" – i.e. parent relations. I would like to acknowledge their input as well as the contributions made by AMI trainers, consultants, and colleagues. I would especially like to thank Kathy Biehl, an elementary directress and marriage and family therapist whose presentation on *Parent Conferences* at the 1991 AMI-EAA Summer Conference provided me with specific guidelines. Also, as an AMI/USA school consultant, I would like to thank all of you who have welcomed me into your school communities and shared your programs, ideas and concerns.

To overview our time together here, we are going to be addressing three areas: *observation, parent communication* and *parent conferences*. The first two areas are the "shoulders", so let's begin there.

Observation

Having recently visited my dentist for a check-up, I've come to the conclusion that observation is like flossing. It can be difficult to establish as a daily habit, but it's worth the effort! Take the time, ***make*** the time to develop a regular daily routine. Soon you'll wonder how you ever managed without it!

Indeed, we all know that Dr. Montessori insisted on observation as the basis for effectively linking the child and the environment; it is certainly a prerequisite for parent conferences. There is a distinction between observation and record keeping, both of which are necessary on a regular basis. I would like to recommend to you an article on this topic by Hilla Patell in *AMI Communications* [1992, #4], which superbly defines, describes and elaborates on *Observation*.

Also, please treat yourself to the booklet by A.M. Joosten with the same title (*Observation*, India, 1965) in which he states, "Observation, loving, exact, modest (i.e. humble), continuous and specially objective (this does not contradict its loving character, but precisely makes it true) is the cornerstone of Dr. Montessori's work of art."

With these two references, you will be well equipped to hone your observation skills!

Parent Communications

Successful parent conferences are built on a positive relationship between you and the parents – regular communication among school staff and parents is essential. Just as preparing and maintaining the environment are your responsibilities, so is effective communication with parents. Think of parent relations as part of the social/psychological environment that you prepare. Positive, productive communications foster community within the school, enabling you and the parents to better meet the needs of the children.

Planning, preparing, and carrying out school-wide parent programs are administrative functions which require support and participation from the teaching staff. Each school must establish procedures which work for them, but there are some general guidelines to remember.

First, for school-wide meetings, establish a regular time and place, and distribute this schedule as part of the school calendar at the beginning of the school year. As you plan the programs, include a variety of formats such as slide shows, videos, a lecture by an outside 'expert', staff panel discussions, opportunities for parents to work with the materials, an evening or afternoon Open House, a grandparents' day at school, a panel of school graduates returning to discuss their transition, potluck suppers, dessert carry-ins, holiday celebrations, student performances, study group discussions. As you select topics, consider using the AMI/USA parenting supplement, *Parenting for a New World*. When you discuss Montessori pedagogical theory, be sure to relate those concepts to the children. Make sure that you mention basics such as the planes of development, human needs and tendencies, psychological characteristics, the mixed age range, typical class size, curriculum areas, materials for discovery and auto-education, the premise of 'help me do it by myself', cosmic education, *erdkinder* – the possibilities are endless!

Parent Conferences

With the above brief discussions of observation and parent communications, we're ready now to look at parent conferences. There are two general types of conferences – developmental and problem-oriented. Most schools schedule one or two developmental conferences each year. Problem-oriented conferences are held on an as-needed basis.

In either event, your existing relationship with the parents affects the outcome of every conference; thus, the importance of establishing and building solid communication with parents cannot be overstated. Keep this in mind as you plan your parent education programs, and remember to always allow time for parents to express their interests and concerns about their children at these meetings. This often occurs during a socializing period, and you should be prepared to chat with parents as a part of your work with their children.

The general goals of parent conferences are as follows:

- To help parents appreciate their child more,
- To learn more about the child (both parents and educator),
- To build a trusting, partner relationship.

Specifically, we want to help adults (parents and educators) gain insight and understand the relevance of Montessori principles in the development and behavior of our children.

Let's talk now about your preparation for conferences. As mentioned, parent education programs play a pivotal role here. First, consider the preparation of the parents. How much do they know about Montessori education? What are their preconceived ideas about what goes on in the school? What are their observations? What do they want? Be realistic about parents; don't underestimate them.

Before the school year starts, your first contact with parents is to meet with incoming children and their parents. This maybe a brief exchange with returning families, but plan to spend some time with new families.

Most schools have a "back-to-school" orientation meeting, which is a good time to give an illustrative description of the planes of development. You might use this meeting as a "teaser" for upcoming parent meetings, as you briefly review the school calendar. At this orientation meeting, be sure to state the teachers' availability (for example, parents may call the school office during the day to request a phone call from the teacher; ask parents not to expect a conference during drop-off or pick-up times; routine calls taken at home one night per week, etc.) Whatever your choices, establish and communicate a procedure for parents to contact you.

After the first week of school, make it a point to have a brief, informal chat with each parent to build your relationship. Continue to do this throughout the year, by note, phone call, or in-person, emphasizing the positive, and sharing anecdotes or information.

When the time comes for scheduled conferences, prepare yourself and the environment! Conferences are usually held in the classroom. If certain days are set aside for developmental conferences, include the children in preparing the environment; for example, they can assist in cleaning, arranging flowers, perhaps setting aside some work they want their parents to see. Briefly discuss with the children what the conferences are about.

To prepare yourself:

- Review your goals for the child;
- Frankly appreciate the child's strengths and weaknesses;
- Aim to build the parents' appreciation of the child;
- Prepare and organize your paperwork for each conference;
- Arrange seating in an open, non-confrontational manner. Remember to use adult-size chairs!

Conferences generally can be scheduled to last for approximately twenty minutes. When the day arrives:

- Begin promptly and stay on time. If the parents are late, use the remainder of their time and re-schedule another conference.
- Greet the parents at the door and indicate seating.
- Begin on a personal note, expressing care for the child. It is important to allow time for the parents to talk and to ask their questions.
- When you speak about the child, emphasize the child's strengths; be frank about difficulties; use emotionally neutral language.
- Allow wrap-up time to summarize; re-schedule more time if it is needed.
- Usher parents out.
- Make notes for yourself before beginning the next conference.

As far as selecting a format for information to communicate to parents, use a checklist or narrative style form; address the areas of social/emotional development, physical development, and academic/cognitive development. Be specific and use precise language. It may be helpful to write down several anecdotes to share for each area. Communicate the child's behavior, not your opinions! If you plan to show the parents samples of the child's work, organize that in advance. Describe your hopes for the child's accomplishments, short-term and long-term.

For *problem-oriented conferences*, the following guidelines may be useful. If this is a teacher-initiated conference, the parents should already be aware of your concern through informal contacts. Your goal is to communicate the problem and to make a plan, with the parents, for its resolution. (This is an adults only conference.)

If this is a parent-initiated conference, try to find out their concern before the conference so that you may prepare. If you do not know their concern, gather anecdotes, observation notes, and information about the child as part of your preparation.

In either instance, follow the *Conflict Resolution Model:*

1. Identify the problem clearly. It is most important to establish your joint concerns and goals.
2. Evaluate the solutions/options.
3. Select the solution/option with parents and teacher establishing their respective roles and responsibilities.

Before the conference:

- Document the problem, the steps taken in class, and their results.
- Establish a reasonable goal for the conference. Pick one thing to work on, not necessarily the most troublesome, buy the most remedy-able.
- Ask the administrator (or another staff member) to sit in. Let the parents know this person will be present. Review your presentation with this person before the conference.
- If the conference is at the end of the school day, allow time to tidy the room and collect your thoughts.

During the conference:

- Begin with a positive anecdote. Approach the problem optimistically, reviewing the problem and the actions of the adults. Keep an open attitude, so that the parents can be their best.
- Stay calm and non-defensive even if you are attacked by the parents. Should the conference become confrontational, end it and re-schedule it.
- Set boundary expectations for the meeting. Begin from the parents' perspective. Describe the difficulty nonjudgmentally.
- Find out who the parents consider responsible for the problem. The child? Teacher? Another child?
- Find out what has been/is being done at home.
- Look for 'invitations' for advice from the parents.
- Work for ***mutual*** responsibility and cooperation in generating solutions/options.

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- Agree and state what the parents will do, what the teacher will do.
- Review and summarize these agreements.
- Should you find it necessary to make a referral to another professional, emphasize that this is for ***evaluation***. Remember that some parents may interpret your recommendations, for example for mental health intervention, as an assault on their characters or parenting skills. Be careful to emphasize that the referral process is simply a request to bring in another form of professional expertise to bear on a child's needs.
- Should the evaluation result in a recommendation for treatment, maintain communication with the treating professional so that the symptoms which led to the original concern can be addressed therapeutically, and so that the communication between therapist and school maximizes the opportunity for a positive outcome.

I hope these general guidelines will be helpful to you in your specific situations. Thank you for your attention. Today and tomorrow, let us all work together for the children. ◆

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Dr. Maria Montessori – A Contemporary Educator?

Margaret E. Stephenson

January 6th, 1997, six months away, will be the ninetieth anniversary of the inauguration of a project in Rome, undertaken by a woman doctor, the first in Italy, for underprivileged children. The woman was Dr. Maria Montessori, the project was the first *Casa dei Bambini*. The children's parents were poor, illiterate, in some cases criminal, given new homes by a philanthropic building society. The parents were often away from home all day, the children left unsupervised. So they were gathered together, entrusted to Dr. Montessori, who gave them their House of Children in the basement of the new housing block. She has said, "The aim of collecting them was not for purposes of instruction." Why do we then see Children's Houses and Montessori schools still being set up all around the world? Why are there still organized Montessori Conferences and International Congresses? Who was Dr. Maria Montessori that her name should be remembered and her work honored? For what? What was it that had its origin that January day in 1907, the Feast of the Epiphany of Our Lord? – the Epiphany, the Manifestation of Jesus Christ to the Gentiles. Was there a manifestation, and to an audience not ready for it, that day in 1907? Was there a manifestation, and if so, of what, that makes me ask whether Dr. Maria Montessori can be called a contemporary educator? I contend that there was manifest, at the Inauguration of the first *Casa dei Bambini* and that there has been a daily manifestation since then and will be the same manifestation, until this world and time are no more, of something that made and has continued to make, Dr. Maria Montessori a contender for the title of contemporary educator ever since 1907.

Books about education are being written yearly, standards of education in schools form matter for much discussion; in your country and in mine children are leaving school without the basic skills of reading, writing and arithmetic. As for knowledge as to how human beings have built up and developed ancient societies and the present ones, this is, for the most part unrecognized as important and untaught in most schools. On the other hand, there is much discussion and concern about curriculum and syllabus, of how these can be divided and what of them should be taught in what years, during the period of schooling. And even more importantly to a great many people, how can this syllabus and curriculum be tested to find out whether or not it has been learnt, and by what age. And should anything be done, or not, about any of these matters? This type of debate has gone on, since first the education of children became a question engaging society.

In the Inaugural Lecture of the Montessori Training Course, held in Poona, in 1948, Dr. Montessori remarked as follows: "Today education (what is called education) is still largely the passing on of information. It is static and stagnant. It fails its purpose if it remains on the same old level, if it does not move with the needs of the time. Mere information imparted is nothing. It is the cultivation of the values that are hidden in the human personality that is of importance and urgently needed today. The mere transmission of a greater amount of information cannot help much. It is the cultivation of the personality itself, of man himself that is necessary… This cannot be done by education as it is conceived and practiced today… It is the study of man, the study of psychic man that must be undertaken… So the beginning of psychic man, the child, must be studied. …This is our new task: to go and study this human energy in a scientific fashion from its beginning, from its conception; to study scientifically this energy as other energies in the world have been studied, from their origin, from their source and to aim at their application."

Remember this was said by Dr. Montessori in 1948. It is still being said in the AMI Training Courses for Montessori Teachers in 1996. The study of the child is still being practiced by authentically trained Montessori teachers, who are following the guide of Dr. Maria Montessori's Montessori, almost ninety years after she undertook the same study in 1907.

Why was it that Dr. Montessori took this study of the child as the core of her work and of the principles of education she taught, rather than the study of curriculum and syllabus? Surely as society became more and more complex, as knowledge increased as the years went on, it should have become more and more important that the children in school should be taught more and more, and that their syllabus and curriculum should increase.

In Dr. Michael Gross' important doctoral thesis, entitled *Montessori's Concept of Personality*, he writes this: "The reconstruction of a humane society is contingent upon the strength and unification of the human personality, the full elaboration of which depends upon a method of education rooted in the laws of development" (p. 61). He continues: "Montessori spoke repeatedly of the need totally to develop one's personality. In *The Child in the Church* she defines the aim of education as "…a total development of the personality, a harmonious growth of all the potentialities of the child, physical and mental, according to the laws of its being." (p. 41)

In an address to the International School of Philosophy in Amersfoort given in December, 1937, Dr. Montessori spoke of her vision of the salvation of mankind through the development of the human personality. She said then: "Education is indispensable not to foster material progress but to save humanity and all our efforts must be directed toward helping the inner man form himself rather than fighting against the outside world." (*Education and Peace* p. 122–4)

It is this, her constantly stated aim of education which, I believe, and propose, entitles Dr. Montessori to be considered a contemporary educator. With this aim, I also believe that she would have been, and will be, a contemporary educator, at any time in human history. And why? Because her subject, her object, her curriculum, her syllabus, her aim of education was, and still is, the unchanging human being, one in his essence, in his transcendent nature, from his inception on earth, to the present time, and on until time is no more.

The study of man is and always will be, the same study. Man in his essential nature, the species human being, is unchanging, otherwise another species would have taken over from him, in the tide of history. Dr. Montessori's vision of the true aim of education is one of the proofs of her genius and the one which makes her always a contemporary educator.

Syllabus and curriculum change with time, change with Departments of Education, change with fashion and phobia, change with the need to write and be published, change with governments, change with the need to allay the fears of society, change with preparing workers for business, industry and commerce, change with the need to be elected and re-elected, change with the urge to add Ph.D. to one's name. And so schools have changed through the ages, and children have had to suffer those changes. But the child in his essence, the object of education, has not changed. The same laws which guided his development as a child of the first human families on earth, are the same laws that guide the development of the most sophisticated nation's child today. And will be the same laws guiding the development of all the children of the future. There is no prehistoric child, no child of Cave Men, no Renaissance child, no child of the Industrial Revolution, no child of the computer age. There is only the child, of all ages, of all peoples, of all nations, cultures, civilizations, of all times. It is this, I believe, that Dr. Montessori saw, through her observations of the children of the *Casa dei Bambini*, of 1907, and that she continued to see, through her on-going observations, until her death. It is this vision she left as her legacy, to the Association Montessori Internationale, a legacy she left to her son, Mario, and which is continued by the AMI, transmitted to its Trainers, to its Committees and carried on unchanged in every authentic AMI Course and classroom.

Dr. Gross says that: "The concept of personality and its organization is the essence of the Montessori Method.... Personality has been defined, according to Montessori's writings, as the totality of one's potentialities." (p. 93-94) If this is so, Dr. Montessori is indisputably, a contemporary educator, as her study is always of someone who is contemporary. The child is continually entering our society – he is therefore always present for our study. He does not change, as do curriculum and syllabus, with the latest fashion. He is always fashionable, always there unchanging, and open to our observations.

But if the "concept of personality and its organization is the essence of the Montessori Method" how did Dr. Montessori envisage the organization coming about? Had she any practical guidelines for those interested in studying the child? Dr. Gross tells us "...the essence of education, according to Montessori, is to provide stimuli appropriate for the optimum development of an individual's total personality. By providing the child with an atmosphere of liberty and after carefully observing him, Montessori was able to develop such stimuli."

But once again, we have to remind ourselves, Dr. Montessori's work with the Children's House began in 1907, and she died in 1952. Even though we may accept that the object of her work is a contemporary child and his development, and that the laws governing this do not change, surely the stimuli she provided so many years ago, must by now be out-dated and old-fashioned. The materials of the early years of this century surely cannot fit the needs of the present day, let alone those of the next century.

What exactly is it that Dr. Montessori provided for the child, all through the years of her working with him? What were the stimuli she considered essential? And is there any way they can be considered proof that she should be thought of as a contemporary educator? She asked that the child be given liberty in a prepared environment. She said that the task of the child was the "formation of man, orientated to his environment, adapted to his time, place and culture." She reminded us that we cannot make a man good, we can only help him to make himself.

What was the prepared environment which Dr. Montessori said must be given the child for his formation? She told us it was the world – "Let us give the world to the small child." At first hearing, this seems an absurd suggestion. The world is a vastness of enormous complexity, surely too vast for the child's mind to encompass. But the world is always contemporary to the child and Dr. Montessori envisaged a way of giving it to him. She realized how it could be made available to every child as he entered it at birth and spent his life within it.

One of Dr. Montessori's great contributions of the subject to child study was that of the human tendencies. This is a principle of human development which adds to the list of reasons as to why she should be thought of as a contemporary educator. The human tendencies are contemporary, were and will always be contemporary as long as the human being is in existence. The human tendencies are innate in man. They are the characteristics, the propensities, which allowed the human being, from his first inception on earth, to become aware of his environment, to learn and understand it, to conquer it for his use, and to rise above it. This environment, for the human beings who first entered it, was an unknown. These first human beings, therefore, had to be given powers which would allow them to know the unknown. These powers were the human tendencies, given to all human beings. Each child, as he is born, enters, as did the very first human being, an environment, created for him but unknown to him. If he was to live his life securely within it, he had to have a way of making a knowledge of it. This way was through the human tendencies. Dr. Montessori's realizaton of this, enabled her to give the child a way of adapting himself to his environment and being secure within it. It was this realization of the human tendencies which allowed Dr. Montessori to say that we must give the world to the small child and enabled her to find a way to do this. If the world were to be given the child, and his human tendencies to be allowed to operate upon it, so that he might learn it and know it, the world had to be made accessible to the child. How could its vastness, its complexity, be made available? How could it be made to fit within the confines of the Children's House?

Dr. Montessori "incarnated" the world in the prepared environment of the Children's House and allowed freedom to the child's human tendencies to become operative within this environment. She realized that the world was color, size, dimension, shape: it was sound, taste, touch, perfume: it was carpeted with grass, trees, flowers: it was decorated with insects, butterflies, birds: it was walked on by animals, great and small: it was watered by rain, and snow, by rivers and lakes: it was plain and plateau, mountain and hill, volcano and glacier: it was sun and moon, night and day, and stars. And this world was inhabited by beings just like the child, who had made a life to be lived, as he had to live his life, from the first moment of their inception on earth.

The sensorial material Dr. Montessori made for the environment of the *Casa dei Bambini* incarnated the qualities of the world, and gave the child the chance to explore its colors, dimensions, shapes, sounds, tastes, touch and smells: its language, its biological and human life, its music and art, its work and play. These qualities, this life, were present to the world in 1907. They are still the same qualities of the world in 1997. In 1907, there were three primary colors and they were incarnated in three pairs of primary colored tablets in the First Color Box. There are still only three primary colors. There were three dimensions in 1907; these are still only three. Dr. Montessori's sensorial materials for the incarnation of the qualities of the world were contemporary in 1907 – they are still contemporary.

But in order that the human tendencies may operate fully to allow the child to make his own knowledge of the qualities of the world he inhabits, he needs to have a symbol for those qualities, so that he can know what they are without having the materials present to embody them. And so Dr. Montessori gave the child language, for his experiences with the materials. The language given was the contemporary symbol for the quality – that symbol is still contemporary and is still given, to crystallize the experience of the quality incarnated by the material.

But as well as the qualities of the world, there were its geographical and biological features to be explored and symbolized in language. For this, instead of sensorial material to be manipulated and then symbolized in language, Dr. Montessori provided the children with pictures and models, with plant and animal specimens, to show individual characteristics. The language in these cases, as well as enriching the vocabulary of the child with name, also added to it with story. This language was always real and contemporary, not fanciful and fashionable nor according to the mood of the moment in educational jargon.

As well as geographical and biological features, as well as being furnished with plant and animal life, the world had been enriched with something greater than any of these. Human life had been created to complete the world and human life had been given two unique gifts, not granted to anything else on earth. These two gifts were intellect and will, in other words, reason and love. With these two gifts, human beings had developed their lives on earth and through the ages had formed societies for cooperation, societies which in the course of time had become states and nations. These societies, states, nations, according to their geographical and biological environments, had made ways of life distinct one from another. As time went on and life became easier to live, they had each developed art and leisure pursuits and had decorated their lives with different customs and ideals. Into each of these societies had been born children who had, through the tendencies of their human nature, explored the environment and the life into which they had been born. These children continue to be born, continue to enter an environment prepared for them by history, but an environment which is unknown to them when they enter it. It is in order that it may become known and therefore conquered, that the nature of man was given the human tendencies. It is by the operation of the human tendencies that man becomes adapted to his environment, which means to be secure within it, because it has become known.

It was this realization of human nature, of what it is and of what its task is in the Cosmos, that gave Dr. Montessori the purpose of her work. It was this understanding of man that enabled her to say that her work was "to give aid to life". It is this aim that makes Dr. Montessori a contemporary educator, relevant to all times in human history. *Aid to life* means aid to the life of a human being who is always contemporary, because he is always born into his own time and place and has to become adapted to it, secure within it and knowledgeable of it. This is brought about through the operation of his human tendencies which are always relevant and contemporary since they are characteristics of a nature which has been, is, and will be unchangeable and therefore relevant and contemporary.

The life of human beings through the ages is given to the child in the prepared environment of the *Casa dei Bambini* through picture, name and story – given as were the nomenclature materials for the objects of his environment, the biology and geography of the world. It is by exploring the world of his own species, through language, that the child in the *Casa dei Bambini* becomes aware of the way human life has been lived and is being lived.

But Dr. Montessori put into the prepared environment other stimuli for the child which would allow him to explore the life of human society.

A group of activities called *The Exercises of Practical Life* was a very early part of the environment prepared for the children of the first *Casa dei Bambini* in San Lorenzo. If this environment was to be the Children's House, to care for it and learn to use it respectfully and responsibly would help the children's realization of it as theirs. So Dr. Montessori gave them dust clothes, soap, scrubbing brushes and water for cleaning, brushes for sweeping up, polish and clothes for furniture and metal objects. The children were shown how to use these objects and became interested in caring for their own environment. Care of the environment, conservation of it, "Greens" and "Greenpeace" are names and slogans which these days often lead to protest and disturbances. Perhaps Dr. Montessori was not only contemporary in 1907, and also now, as Exercises of Practical Life are still part of Montessori school activities, but may be before her time. What might happen if these activities were also part of traditional education? Maybe "Greenpeace" and the "Greens" would no longer be needed.

The Exercises of Practical Life include other activities besides those of caring for the environment. The child himself is a part of the environment and therefore needs to know how to care for himself. He learns in the *Casa dei Bambini* how to deal with getting in and out of his clothes, how to fasten and unfasten them, how to look after his personal appearance, how to respect himself, and how to comport himself as a member of a civilized society. This is the way to help the child realize his own human dignity.

But the child is a member of society, since he is not living on a desert island and therefore needs to know how to live in a society. Within the Exercises of Practical Life are the Exercises called those of "Grace and Courtesy." These qualities would seem to have almost disappeared from contemporary life so perhaps to claim them for Montessori could be to condemn her principles and practice as irrelevant.

But should these actions and acts of grace and courtesy be irrelevant to today? St. Francis de Sales spoke of *courtesy as the fine flower of charity*. We hear today a lot about love, of all kinds, and of all manner of people and things. Supposing we stopped talking so much about love and practiced it instead. Supposing everywhere the Exercises of Grace and Courtesy became a major part of education. We might end up with fewer Ph.D.'s but with a more civilized humanity. And therefore a society more relevant to the times in which we live if we wish to make of that society of humanity one which can live in peace with and acceptance of everyone.

But the Exercises of Practical Life have a deeper and more significant purpose than merely to learn to care for the environment, for oneself and for others. Hidden within them lie the "stimuli appropriate for the optimum development of an individual's total personality." (Gross, p. 9) With regard to the Exercises of Practical Life, Dr. Montessori has remarked that "to do an action gracefully, it is not enough to do it with a smile on one's face." The Exercises of Practical Life, because of what they are and of the way they are presented to the child, allow for the possibility of perfecting the action. There is **no** correct or incorrect way of carrying out the Exercises of Practical Life – there is a way of doing them more and more perfectly. This requires more and more control of the action, but, and this is where the significance lies, control exercised by the child himself, on himself – self-control, not a control exercised and commanded by someone else.

Is self-control a relevant issue for our times? Looking around at society, is self-control a valued characteristic? If not, and there is plenty of evidence in news reports and on television and newspaper pictures to say not, should it be? If it continues to be neglected in society, where will society end? Was Dr. Montessori relevant, when she gave the Exercises of Practical Life to the children in 1907? Are Montessori teachers relevant today if they still continue to give the Exercises of Practical Life to the children in their classes? Was Dr. Montessori not only relevant in 1907, but beyond her time? Is she not only a relevant and contemporary educator today, but also beyond her time?

When she spoke, as she did in the 1930's about *Education and Peace*, she had in mind the child's potential to be an agent for change. If the child can be helped to develop control of himself, of his impulses, emotions, actions, then we may hope that the adults they become will be able to be in charge of themselves and human society become an agent for peace. However, Dr. Montessori's work for children was not confined to the young child, the child in the *Casa dei Bambini;* from her medical and psychological training, she spoke of the task of the child as "the formation of man, orientated to his environment, adapted to his time, place and culture." This task of formation was to progress through what Dr. Montessori called the *four planes of development*. These four planes were each roughly of six years' length, taking the child from birth to twenty-four years of age, which Dr. Montessori concluded should be the stage of the mature adult. Each of these planes showed distinct psychological characteristics, so each needed its own significant prepared environment, its own work, its own prepared adult, to guide the formation. The four planes fall into two patterns – one, the first and the third planes resembled one another, as did the second and the fourth planes. Two, the first and the second planes complemented one another, and formed the stage of childhood, the first plane beginning it, and the second completing it. In the same way, the third and fourth planes complemented one another, the third beginning the stage of adulthood, the fourth completing it.

We have looked cursorily at some of Dr. Montessori's principles and practice for the child in the First Plane and wondered whether with these in mind she could be considered relevant as an educator to present times and thought of as a contemporary educator.

We would need also to consider her claims as contemporary in relation to the education of the child at the Second Plane. What did she propose for the older child, the child from six to twelve years of age? What about a prepared environment? Was it to remain a closed, secure place like the *Casa dei Bambini*, the room and its furnishings fitted to the size and strength of the small child who would there explore the world, incarnated in the special materials? Dr. Montessori's studies of the psychological characteristics of the four planes had enabled her to realize that the older child needed a wider environment. In the First Plane, the child's task had been to form the individual self. At the Second Plane the child had to take his individual self and begin to prepare it to enter a wider society of other human beings and to learn how to belong to that wider society. So the *Casa dei Bambini* would not suffice for this.

The second-plane child needs a double environment – the classroom and society outside it, because the child now needs to learn about the society which he will have to enter and to become one with, if he is to live his life amongst other individuals. But what did Dr. Montessori envisage this older child doing, in his prepared environment of the classroom, and the environment of society? She had said "Give the world to the small child" and we have considered how this could be done. So now, Dr. Montessori asked what was left for the older child – "only the Universe. The Universe is an imposing reality and an answer to all questions." And so she proposed for the second-plane child what she called *Cosmic Education* and first spoke about it in 1935 in London.

In an address given in Copenhagen in 1937, she said, "Education as it is commonly regarded encourages individuals to go their own way and pursue their own personal interests. School children are taught not to help one another, not to prompt their classmates that do not know the answers, but to concern themselves only with getting promoted at the end of the year and to win prizes in competition with fellow pupils..." "An education capable of saving humanity is no small undertaking; it involves the spiritual development of man, the enhancement of his value as an individual and the preparation of young people to understand the times in which they live." "...Men can no longer remain ignorant of their own natures and the world in which they live. Education points the way to a new world to conquer: the world of the human spirit." *(Education and Peace*, pp. 34-35) Cosmic Education is still the program for the children of the Second Plane in Montessori schools. Is this program, and is Dr. Montessori, still relevant? Should this still be the theme for contemporary education in schools which bear Dr. Montessori's name?

Dr. Brian Swimme, a contemporary specialist in mathematical cosmology says this in his book, *The Universe is a Green Dragon*, "...the human species is the youngest, freshest, most innovative, newest species of all the advanced life forms on the planet. We have only just arrived. If we can remain resilient, if we can continue our questioning, our developing, our hoping, if we can live in awe and in the depths of wonder, we will continue moving into the only process that now matters – our authentic maturation as a species. It is in this way and only in this way that we will enable the earth to bloom once again." (p. 19)

Dr. Montessori believed that Cosmic Education for the child of the Second Plane would enable him to arrive at the ultimate question for himself at this stage: "Who am I? Have I a role to play in this wondrous Universe?"

Father Thomas Berry is author of *The Dream of the Earth* and co-author with Brian Swimme of *The Universe Story*. Father Berry's vision fosters a rapprochement between science and religion with both working together to build a more equitable society and a more sustainable world.

More and more people are becoming concerned about the natural world and life on our planet. Conservation of natural resources, ecological research are subjects of much discussion and study. Cosmic education has a great deal to offer in making the child of the Second Plane aware of his responsibility not only for himself but for the Universe of which he is a part. The Great Stories which Dr. Montessori gave the older child to introduce him to the creation of the Universe, the laws, directives and order which governed the elements of which it was composed, its furnishings of plants and animals, its peopling with human beings, their continuing story in which the child has his own part to play, show Dr. Montessori as more than just a contemporary educator. They show her in advance of her time when she began to speak of Cosmic Education and the advantages it would bring to the schooling of children. In this time of great concern, for humanity and for our world, has Dr. Montessori something to offer education that is relevant and contemporary?

But we have said that Dr. Montessori recognized that the formation of man from birth to adulthood went through four different stages. We have dealt only with the first two, very important stages, it is true, as they lay the foundation for the progression to maturity. Had Dr. Montessori anything to offer to the child of the Third Plane and anything to say as to what the mature adult should be?

From her observations of the child at all the stages of his formation, from her realization of the part played by the psychological characteristics of the four planes, and also the significant but mostly overlooked part played in the construction of man by his human tendencies, Dr. Montessori formulated a plan which, she thought, would meet the needs of the adolescent, the human being of the Third Plane. She recognized that he showed, as did the child of the First Plane, individual characteristics – that the first-plane child had to form himself as an individual, before he could visualize, at the Second Plane, himself as a member of society and fit himself into it. He showed the same need at the Third Plane. He was now forming himself as an individual adult – the child

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of the First and Second Planes should have been completed. If the human being was to become a responsible adult, the third-plane child had to be given the opportunities, the environment, the activities, which would fit him to take a responsible role in the life of adult humanity. The adolescent needed an environment, activities, studies, which would lead him to and prepare him for, an independent adult life, a life in which his reason would enable him to make responsible judgments, where his reason would guide his emotions, where his formed will would enable him to make the right choices for himself and for those for whom he had become responsible.

Unfortunately Dr. Montessori did not live long enough to carry out her ideas for the adolescent. Since her death, no country has been foresighted enough to see that her ideas for the adolescent were the only ones that should guide how we educate them. True, there have been "nibbles" at the plan, much discussion of it but nowhere in the world has it been put into practice.

If it could be put into operation, could Dr. Montessori then be considered as a relevant educator for the high school? Is her plan necessary for adolescents? To give them a boarding school in the country, to give them the responsibility of running their own hostel, though under adult supervision and guided teachings, to give them a plan of studies based on agriculture and how it enabled the earliest human beings to come to cooperation as societies, of how machines changed society and the benefits they bestowed and the dangers they posed, to take advantage of the characteristics of this plane, which is the age of vocation, of apostolate, of service, to bring to a realization what the answer is to the question of the Second Plane's cosmic explorer, "Who am I? Have I a role to play in this Universe?"

We see a picture of present society all around us. If we do not see it in the flesh, in school, park, sports field, if we do not hear it in the "language of the grunt", as the United Kingdom's Minister of Education has described the speech of adolescents, if we do not see it in their abysmal ignorance of anything to do with geography, biology, history, if it is not apparent in their dress, their lack of manners and courtesy, their eating habits, their lack of culture, if we do not see it exhibited in person we see it on television, in the pictures and reading in the newspapers. And we have the statistics of crime, of the number of shootings committed by teenagers.

Can this picture be changed? Dr. Montessori many years ago told us that "the child is both a hope and a promise for the future." This hope, this promise, comes to human society each day, all over the world. What have we done, what are we still doing, with this continual hope, this continual promise?

Can we lay aside the prejudice that what Dr. Maria Montessori did and said was all right for those poor Italian children of 1907, but we are almost in the year 2000, the space age, the computer age, the age of Internet, fax machines, of e-mail, and she is not relevant?

I have attempted to show that she is relevant, perhaps even more relevant today than ever, because what she showed us was not a method of education, not a system of teaching and learning, not a curriculum and syllabus enshrined in textbook and teachers' lessons, not tests and works, report forms and diplomas, degrees and honors. What she revealed to those who would observe and listen was *Everyman*.

Everyman holds within himself and herself a system of learning, a curriculum and syllabus, his or her own tests and marks, his or her own achieved results in life. Dr. Montessori spoke about *the secret of childhood*, and of how *to educate the human potential*. I contend that she should be considered a contemporary educator, because she gave us a way of unlocking the secret of childhood, of educating the human potential. These are contemporary throughout history, because they are the property of the human being, who was, is, and always will be contemporary in time. ✥

Margaret E. Stephenson studied with Dr. Maria Montessori for many years and, in 1960, was commissioned by the Montessori family to travel to the United States as a teacher trainer for the Whitby School in Connecticut. In 1962 an AMI training center was opened in Washington, DC with Margaret Stephenson as its Director of Training. Miss Stephenson was the Director of Training at The Montessori Institute of Milwaukee, Inc. from 1989 to 1995 and continues to lecture at this center. She currently remains involved with Montessori as an AMI lecturer, teacher trainer, and examiner. She is also a member of the Sponsoring Committee and is qualified to direct AMI primary and elementary courses.

The Relevance of the Erdkinder Vision

Linda Davis

My experience with adolescents is limited – primarily two years of an adolescent program in a Montessori school. I may share observations from that work, but the ideas that I present here today are those of Maria Montessori. Why? Because when I tried to implement a bit of what she described for adolescents (in the form of short stays on farms) what I saw there convinced me that the *erdkinder* she described ***is*** the prepared environment for adolescents that will best aid their development.

During her life Maria Montessori developed or at least described environments that would serve the characteristics of developing lives from birth through university. Environments that would allow each person to thrive and construct him or herself to be unique – and yet function within and contribute to society.

Today, as we approach the 1st century anniversary of the opening of the first Children's House – less than eleven years away – we can go to any of the inhabited continents and see examples of these environments for children from birth to age twelve. We can see tiny toddlers cutting bananas, putting them on plates, and serving them at tables that are just their size. We can see three year olds, who have moved up to sharp knives, cleaning and slicing carrots, perhaps assisted by a more experienced six year old classmate. In this same room we can see three to six year olds reading; creating their own stories with the moveable alphabet; discovering how to add, subtract, multiply, and divide; and all in an environment that is calm but alive with joy. We can see that calm and that joy on the faces of the children. We can go into an elementary classroom and see – and hear – clusters of children deciding who will do what on a research report, or debating whether a noun is collective or material – or perhaps ***not*** see them, as they are out in the community, "going out," extending their learning experience beyond the walls of the classroom, exploring the life of their culture.

We can see wonderful programs for adolescents being led by dedicated Montessorians. What we ***don't*** see is an *erdkinder*, the prepared environment that Dr. Montessori described for adolescents.

Here's what we don't see:

A farm: a farm where adolescents live and work.

A shop: a shop where the students sell what they have grown on the farm, and things that have been made by themselves and others.

A small hotel: perhaps a sort of bed & breakfast, run by the students and available to their parents and others who want to visit them on the farm.

A collection of machinery; machines that the students can take apart, study, put back together, and use.

The place and opportunity for creative work; plays, making music, drawing, working with clay.

Adults; houseparents who live with the students. Teachers who live on the *erdkinder*, and some who don't. Technical instructors who help with the running of the businesses and who teach the mechanics of farming. Other adults – friends, relatives of the students who assist with the running of these various enterprises.

And work: manual work and intellectual work. The opportunity to work with their heads and their hands. Meaningful work with adults. Work that gives practical experience. (If you know any adolescents, you know that the question "Why do I need to learn this?" is as common as the "How?" and "Why?" of the elementary child.) Work that does more than serve their individual needs. Work that helps them understand and respect the role of work (work with both the head and the hands) within our culture.

Most of you have heard these ideas before, have perhaps read Dr. Montessori's two-part essay, *Erdkinder*, in which she describes these components. Like many, including me at one time, you may have thought, "How impractical. Expensive to begin with. Who on earth is going to send their twelve year olds away to live. And a farm? In our culture? Clearly Dr. Montessori didn't get this one quite right. Let's just pick and choose from these ideas and see what we can put together."

I wonder – what sort of reaction might Dr. Montessori have gotten if she had come to a group of parents with the fully developed Children's House plan before the opening of that first Children's House. Would they have believed a description of how the children would function in that environment? Perhaps she would have been asked to compromise on some of the more extreme points. Those sensorial materials, for example. They're awfully expensive. Perhaps we could do without them. And how about just two or three days per week. Should those little ones really be away from their mothers ***every*** day? And how about a refreshing recess in the middle of the morning. We all know that three hours is much too long for small children to work without a break.

Listen to what she did have: "...not a penny for toys or equipment of any kind...no money for meals..." but "...a room, provisions for one supervising adults, and fifty wild children ranging from ages two to six." (Kramer, p. 111)

As Montessorians we come from a tradition of the seemingly impossible. But these questions about the *erdkinder* exist and need to be dealt with. Let's start with the big one – this residential idea. Even if you could find families that would allow their children to live away from home, would it be healthy?

First, let's look at why Montessori advocated this. In her analysis of the stages of development of children, she pointed out how similar the ages twelve to fifteen are to the first three years of life. The most obvious similarity is the phenomenal physical changes, which call for a degree of protection for these beings who are changing so dramatically. Is this comparison of the two age groups a view unique to Montessori? Here's a quote from *Today's Children*, by David Hamburg, who was president of the Carnegie Foundation when their influential *Turning Points* report was released. "In many ways they resemble a larger version of toddlers – having the newly acquired capacity to get into all sorts of novel and risky situations, but all too little judgment and information on which to base decisions about how to handle themselves." (p. 183)

Look at how we organize our lives around children in the first three years. Infants need nighttime feedings and diaper changes. There's babyproofing the house when they begin to crawl. Attention to their physical needs requires constant attention. Maternity leaves are granted because our culture has recognized the demands that the early months of life place on families. Does that mean that we need "adolescent leaves"? Time off for parents to give time and attention to their teenagers?

Montessori also points out the differences between the two age groups. Adolescence is a time of "...transition from the child who has to live in a family, to the man who has to live in society." (*Erdkinder*, p. 98) That's not to say that they have to completely separate from their parents and move on out into the world without any family support at the ripe old age of twelve. But they do need to separate from their role as a child within the family, to begin to take on a new role. They still need protection and guidance, which they receive in the *erdkinder* – perhaps more protection than they get at home.

What happens if they ***do*** stay at home? A study done in the 1980's in Chicago found typical adolescents spent an average of five minutes alone each day with dad, forty minutes with mom, and one hour with both. (Scales, p. 42) And doing what in most cases, I wonder? Parents bugging to get homework done, or to take out the garbage? Or perhaps having one of those famous one-sided adolescent-parent conversations. One of my former students who was a high school sophomore at the time told me that she "really talked" to her mom about one time a month, and the other adolescents who were there agreed that was normal.

How are they spending the rest of their time, when they aren't in school? Hanging out at the mall? Watching TV? When the group of adolescents I worked with went away for two weeks, they and the parents reported finding the time they spent together in the day or two after their return the most satisfying time they had together for several months. I also saw the shift in relationships when the students prepared a very elegant meal for their parents and served them – much as they would have the opportunity to serve their parents in the *erdkinder* bed & breakfast when they visit. Truly separating – not from their parents but from their role as a child.

There's much more to say on the residential aspect of *erdkinder*, but let's move on to other considerations. Why a farm? Are we preparing them to be farmers? No. Montessori states that quite clearly in her essay. My reaction when I first read these ideas in the early 1970's was that Montessori had anticipated the "back to the land" movement. We should all move to small, self-sufficient homesteads, and this was a way to begin. Are we taking them to a farm so they can get their hands in the dirt? Is there some inherent developmental need to dig and plant? *Erdkinder* does mean "earth children" in German. I assumed so, and was wildly disappointed when the adolescents I worked with didn't show a strong propensity for working with the soil. I worried that they had been negatively affected by their life in an urban environment. Then I returned to the *Erdkinder* essay, and I found it – the reason for the farm. "We have called these children the *Erdkinder* because they are learning about civilization through its origin in agriculture." (Montessori, p. 107) They're not in the country to have a lovely boarding school experience, although the peace and quiet of the country is important for them. They're not there to be full-time agricultural workers. They're not there to be completely cut off from the world. Remember, she called for moral and spiritual protection ***and*** the opportunity to learn about society. They are there to learn about human society from its simplest origins – the production and exchange of agricultural products. Our current society may be based more on the production and exchange of ideas and services than on farm products, but it's still production and exchange, which is at the foundation of human society.

Randall White of New York University is quoted on this subject in Leaky and Lewin's book, *Origins Reconsidered*: "In the modern world we tend to think of exchange, or trade, as a purely economic transaction. But in most small-scale societies it operates as a vehicle of social obligation... Obligations are social bonds capable of tying together different social groups." (p. 324)

The "different social groups" would come together in the shop, which Montessori said would be like the medieval market which served as a social center. She also compared it to the aquarium and terrarium, which are models of the biological world. The shop would be a model of the economic world.

In the primary class we give the physical qualities of the world in the sensorial materials. Now we give the essence of the human society that they are preparing to enter. Just as the three dimensions as experienced by the pink tower will always be relevant, so will be the *erdkinder*. But ultimately, there is one reason why this model will be relevant far into the future; "...the only sure guide for education is the very personality of the children to be educated." (Montessori, p. 97) Those universal psychological characteristics of each age group – unchanging over time, the same all over the world. But ***is*** adolescence the same time of development today that it was 50 or 100 years ago?

What about these physically mature ten year olds that we see and all the statistics about sexual maturity being reached at a younger and younger age? Montessori made the distinction between the physical and psychological sides of adolescent development. Similarly, current adolescent development draws distinctions between these types of development. One particularly concise source that I found is a book called *Restructuring the Middle School*, by Sally and Donald Clark. In their summary of current thought in adolescent development, they defined three areas of change in development: biological, cognitive/psychological, and social. The research that they summarize agrees that while biological changes are occurring on average five years earlier than they did 100 years ago, there is no indication that the psychological and social changes have accelerated. A sexually mature ten year old still has the cognitive and social development of a ten year old. Much of what we all recognize as adolescent characteristics and write off as hormones are in fact often related to other aspects of development, including dramatic changes in the structure of the brain.

It may be unnerving to have children in our nine to twelve classes who are sexually mature, but they ***are*** still children, and we must honor their developmental needs by not pushing them on too soon as so many middle school programs are now doing, starting with sixth and even fifth grade instead of seventh.

Getting back to our "only sure guide" for putting together a program, how do Dr. Montessori's ideas about the developmental characteristics of adolescents compare to current theorists? Many lists and sources of current thought on adolescent development are available, but I've chosen to use *Seven Key Developmental Characteristics of Early Adolescence* as listed in the booklet *A Portrait of Young Adolescents in the 1990's*. This was written by Peter Scales for the Center for Early Adolescence at the University of North Carolina, a research center which unfortunately no longer exists.

◆ Physical Activity

Scales says that adolescents have a strong need for physical activity because they "experience very rapid and uneven physical development." Montessori advocated a country setting for adolescents in part so they could easily walk, swim, and get other physical exercise. She also spoke of the importance of a healthy diet, clean air, and sunshine.

◆ Creative Expression

Scales also cites the need adolescents have for creative expressions. He says that they "need opportunities to express to the external world who they are on the inside, be that in music, writing, sports, art, cooking, or making up games for younger children to play." (p. 14) Montessori identified a tendency toward creative work as one of the primary characteristics of adolescents. A strong element in the *erdkinder* environment is the place and opportunity for creative work.

◆ Structure and Clear Limits

Scales explains the importance of giving adolescents structure and clear limits. "Explicit boundaries help define the areas in which they may legitimately seek freedom to explore." "...they require structure and guidance in setting clear limits that involve them in the process of decision making." (p. 13)

Does this sound familiar? Exploration within a prepared environment? Freedom and responsibility? As in any Montessori prepared environment, some of the structure and limits would emerge naturally, and she warned against having too many rules, which would interfere with that process. For example, when my group lived away for two weeks we had a system that required the students to write on a grocery list any food items we would be needing. If you mixed the last of the orange juice, you needed to write "orange juice" on the grocery list. One student consistently didn't – but just for the first week. Having to face his irritated – and thirsty – classmates soon helped him remember to record food on the grocery list.

Some limits, especially at the beginning of the program, would have to come from the adults. Montessori was clear about the need for a strong set of standards for everyone on the *erdkinder*. It would be co-educational, and the houseparents would be significant in guiding the students morally. I had some help in describing why these kinds of rules are needed when Miss Stephenson visited us during our last farm trip. The students were sitting around talking with her during a brunch at which she was our guest. They were describing in remarkably articulate terms what they thought Montessori had done for them. This had gone on for some time when she asked them what they didn't like about their experiences – surely there must be something! One of the girls then explained that they didn't like it that I sometimes didn't trust them. Just the night before they had wanted to all sleep together in the living room – boys and girls together – and I said "no." It was obvious to them that indicated a lack of trust on my part. Miss Stephenson calmly explained that there are two kinds of rules in life: rules to stop people from doing bad things, and rules to just help us regulate ourselves. Traffic lights, for example, are there to help us in regulating our lives. Yes, I thought, what a wonderful way to explain limits to these students, who at this time in their lives will need some of those traffic lights.

◆ Positive social interaction with adults and peers

Getting back to Peter Scales and his list of characteristics, he also says that adolescents must have the opportunity for positive social interaction with peers – **and adults**. They have a "need for caring relationships with adults who like and respect them and who serve as role models and advisors." (p. 13) He goes on to explain that, "Young adolescents begin the task, not of separating from parents so much as differentiating and distancing from parents enough to establish a personal identity. Gilligan describes the task as finding out how to have attachments with others without losing oneself in the process." (p. 16) Having attachments to others without losing oneself in the process – much more difficult to do with your own parents than with other adults.

In the two years that I worked with adolescents, the biggest surprise to me was their desire for relationships with adults. In our times on the farm, they actively sought out adults in a variety of ways for interaction and discussion. It seemed particularly significant to me that when I asked them what kind of work they preferred to do, the response (given by one girl and agreed to by the others) is that it's not what you do but what *adults* you do it with.

Again from David Hamburg's *Today's Children:* "Today, adolescents' information comes largely from the media and unrelated peers, and much of it clashes with parental expectations. Most early adolescents yearn to be adults without actually understanding what adults do and are. ...one of the most important things we can do for adolescents is to give them a clearer view of constructive adults roles and what it means to be a respected adults." (p. 183)

As I read that quotation, I'm thinking of Renilde Montessori's talk the other night and her reference to *The Sibling Society.* Think of the effect on adolescents if they see and interact with adults who are trying to act like adolescents! I think this is a real danger for adults who work with students of this age group. In Scales' book, he makes reference to polls conducted in Chicago and Minnesota that showed that most young people think that adults have negative images of them. Even parents "underestimate by factors of three to five the extent to which their young adolescent sons and daughters are concerned with important national and world issues." (Scales, p. 43) It is no wonder adolescents feel that many adults have negative opinions of them.

Montessori gives a significant guideline for working with adolescents in *Erdkinder* when she says to treat them with more respect than they might seem to deserve. This part of the development of their sense of personal dignity, which along with a sense of justice, make up what she labeled "the most noble characteristics that would prepare a man to be social." (p. 101) Without the development of both of these, the most serious individual and social problems that we see can develop. (Note that once again Montessori deals with both personal development and the development of society as interrelated.)

◆ Meaningful participation in families, school and communities

Scales' next characteristic of adolescents is the need to participate meaningfully in families, schools, and communities. They "require exposure to situations in which they can use their skills to solve real-life problems" and "need to participate in the activities that shape their lives." (p. 14) He goes on to say "...although preoccupation with self is common in the age group, overemphasizing that aspect of development rather than the need for attachments with others may prevent us from seeing the desire and reality of young adolescents' giving to others and bettering their communities." (p. 16) "...it may be true that most young adolescents worry a lot about their looks, but sizable numbers also worry about hunger and other social problems, and many do something about that concern." (p. 17) "...young adolescents can lead others, meaningfully participate in the working of their schools and communities, and develop excellent ideas that solve social problems." (p. 17)

What Montessori told us is certainly consistent with this, but I think she offers an even broader and deeper view. She said that achieving economic independence is a primary developmental task for adolescents. Remember that economic means more than the exchange of money. This is their way of becoming part of the society around them. Just as they don't play at cutting carrots in the primary, they don't play at becoming members of society as adolescents. They need real experiences.

This affects not only the students, but those who come into contact with them. In our dairy farm experience, the students had to work their way up from the most menial tasks, e.g., cleaning out the barns, to being able to actually sterilize the cows' teats and apply the milking machines. They understood the importance of doing this right – the inspector from the purchasing dairy had just been around and was a reminder that people would be buying and drinking this milk. To them it was quite an honor to be able to take part in the actual milking. And when an outbreak of flu struck the adult workers, there were a few days where they were doing a significant amount of the work. You probably assume that had a positive effect on their sense of themselves. It did, but it also affected the workers. The owner of the farm said she had never seen their morale so high as it was after having these kids come in and show respect for them and the work that they did.

One reason the students can begin to look at broader social concerns and begin to see where one can play one's role in society is that young adolescents are "cognitively improving their ability to sense group and community needs." (Scales, p. 45) They have an increasing ability to think big thoughts, made possible by physiological changes in the brain. This was explained to me quite clearly by two girls in my class, who told me that they could feel their brains getting bigger; that they noticed that they could have thoughts that just months before they were incapable of having. They also observed that these expanded thoughts were changing their relationships with adults, who were often threatened by their advanced thinking – and arguing – skills.

◆ Competence and achievement

This fits in with Scales' developmental characteristic, that adolescents need to experience competence and achievement. They "need to find out what they are good at doing." They "...can be painfully self-conscious and self-critical and are vulnerable to bouts of low self-esteem, so they require many varied opportunities to be successful and have their accomplishments recognized by others." (p. 14)

He warns that there is much talk about the need to raise self-esteem, but that we often don't distinguish between self-worth (the belief in one's unique value) and self-efficacy (the belief in ones' ability to accomplish objectives). "Self-worth might be increased by chanting 'I am somebody' but no chant will raise self-efficacy, the sense that one's actions can have an impact on the real world. Opportunities must be provided for young people to have that impact, to reach a little bit beyond their grasp." (Scales p. 45) Compare this to what Montessori said in *Erdkinder*: "The feeling of independence must be bound to the power to be self-sufficient, not a vague form of liberty deducted from the help afforded by the gratuitous benevolence of others." (p. 102)

◆ Opportunities for self-definition

Scales gives one more characteristic – the need to have opportunities for self-definition. They "require time to reflect upon the new reactions they receive from others and to construct a consistent self-image from the many different mirrors in which they view themselves." (p. 14)

Reflection. Meditation. Those were Montessori's words for what adolescents need. Once again, I think she takes us one step further. Self-definition is not an end in itself. It empowers the individual to take his or her place in society, to find one's "cosmic task." In healthy development it leads to what Montessori called "valorization," which is self-confidence combined with knowledge of one's own capacities, used to help one adapt to society. That's adapt, not adjust. To adjust implies changing oneself to fit in. To adapt means to find the place that fits you.

Here we are, more than 40 years after Dr. Montessori's death, even more years since she wrote in *Erdkinder*, in which she said: "The need for reform in secondary teaching which makes itself so urgently felt poses not only an educational problem but also a human and social problem, which may be summed up in this way: the schools, such as they are today, are not adapted to the needs of the adolescent or to the age in which we live." (p. 95)

Has that changed? Another quote from Peter Scales: "Most education reform so far does not represent a fundamental change in outlook and structure so much as it represents add-ons to a philosophy and curriculum well-suited to the 19th century." (p. 38) Does this sound like the "better bench and blackboard" to which Dr. Montanaro referred in her talk? Scales goes on to criticize efforts to keep teens in school, whether they are based on punishment or reward, as assuming that everything the school is doing is fine; poor performance is the students' fault.

What is the fundamental change that is so badly needed? I think it's the *erdkinder*. In her talk on the first night of this conference, Renilde Montessori compared the first and last years of life to the times just before dawn and just after sunset. There is still light, but it is a "magic light" that casts no shadow. What a beautiful image. It occurred to me that there is one other time of day when light is cast in such a way that there can be no shadow – noon, the break between the morning light and afternoon and evening light. Perhaps adolescence is the noon of life, another time of magic light.

I'll close with these words of Maria Montessori from *Erdkinder*: "It is necessary to consider not only the active occupations but the need for solitude and quiet, which are essential for the development of the hidden treasures of the soul. In the soul of the adolescent, great values are hidden...and in the minds of these boys and girls there lies all our hope of future progress and the judgment of ourselves and our times. (p.113-114) ◆

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Maria Montessori Envisioned Physics as Part of the Environment

Peter Gebhardt-Seele, Ph.D.

The Issue

Today's teacher training for the Montessori class of the 6 - 12 year olds includes simple science experiments in the geography curriculum, but no consistent physics curriculum.

Maria Montessori, however, did envision physics as part of the environment in the elementary class and, in suitable form, in the *Casa dei Bambini*.

The Science of Physics

The etymology of physics, from the Greek through the Latin language, goes back to the verb *phuein* – to bring forth, to make grow. The noun *phusis* then means *nature*, all that is brought forth. So ***physics*** is the science of everything in nature, in the cosmos, in reality.

However physics is not a descriptive science like botany, counting all the plants and classifying them as the plant kingdom. Physics deals with the laws, the inner workings of nature.

Physics may not be confused with technology. Technology, yes, is applying those laws. If you operate an automobile or a nuclear bomb, these laws are made to function in a way the designing engineer has planned. But that is not the subject of the science of physics.

Physics is concerned with the law itself, no matter what human beings later on do with it.

Physics also is not just the science of dead matter as it is frequently seen. Animals and plants, too, follow physics laws. Our heartbeat follows physics laws, our bloodstream does, the chemistry in our body does. Every atom in my nose follows these laws and of course not only in the nose. But when we set up experiments in order to verify these laws, plants and animals are too complex. To isolate the phenomena to be studied, we use simple apparatus, as you see on display here next to the lectern: levers, pulleys, inclined planes, etc. But that does not mean the laws are limited to that kind of apparatus.

In summarizing we may say, physics is the science of the laws governing all matter and energy in the cosmos.

Physics in Cosmic Education

Cosmic Education is the great plan for the elementary class. Maria Montessori pronounced the plan of cosmic education in a lecture in 1935. One of the aspects of cosmic education is, *give the whole universe to the child*. Don't provide a collection of subject matter, but give a vision of the whole, a vision of the order and harmony throughout the cosmos. *Cosmos*, the Greek word, has the connotation of the total universe, not just as a pile of rubble, not just a chaotic entity, but the total universe in order, in harmony. Harmony and order in nature was a phenomenon which the Greek philosophers pondered intensely and the concept of *cosmos* encapsulates that philosophy.

Maria Montessori, in *To Educate the Human Potential*, first published in 1948, writes about the elementary child: "...there is an unusual demand on the part of the child to know the reasons of things. Knowledge can be best given where there is eagerness to learn, so this is the period when the seed of everything can be sown..."[1] I might stress the word ***everything***, because here we are considering something which, so far, hasn't been counted as our elementary curriculum.

I might also stress the notion that the child wants to know the ***reasons*** of things. Physics studies the reasons of all matter and energy.

The text continues: "...when the seed of everything can be sown, the child's mind being like a fertile field, ready to receive what will germinate into culture. But if neglected during this period, or frustrated in its vital needs, the mind of the child becomes artificially dulled, henceforth to resist imparted knowledge. Interest will no longer be there if the seed be sown too late, but at six years of age all items of culture are received enthusiastically, and later these seeds will expand and grow. If asked how many seeds may be sown, my answer is: 'As many as possible!'"[2]

Recently I had a chance to introduce physics to adolescents and I recognized what a difference there is from the same work in the elementary class, which I had done previously. While elementary children take to it with enthusiasm, adolescents are, at best, polite listeners. This experience confirms to me: we may not push physics into the adolescent level. It is elementary work. At the adolescent level it is too late. That is what Montessori says in her text quoted. At six years of age is the time when children express keen interest in physics. At high school age their interest is somewhere else.

The Idea of the Cosmic Task

Another aspect of *cosmic* education is what Montessori called the *cosmic task*: every bit in the universe has a task. In *To Educate the Human Potential* she writes about "the *Cosmic Plan* in which all, consciously and unconsciously, serve the great Purpose of Life."[3] In further parts of this text Montessori gives examples of such cosmic tasks, coral cleaning the water of excess calcium, plants preparing the oxygen to enable animal life, bees taking care of pollination, etc. All these she sees as servants to harmony in nature.

Human beings, too, have a cosmic task. They, however, are not guided by built-in programs or instincts. Human beings need to be guided by their own intellect. Mario Montessori, Jr. in *Education for Human Development*, says:

"This is what Maria Montessori called the cosmic task of man: to continue the work of creation... Man does not have built in programming as does the salmon (when it migrates up the river, a timely image in Seattle!). He (man) must program himself, through conscious effort. It is obvious today that man desperately needs the intelligence to use his power to change things constructively. This is his only hope, if he is to maintain his self-made environment in a condition that may permit human life to evolve toward a dignified existence for everyone. This can only be achieved with the aid of education."[4]

The Threat to Our World

For the self-made environment Maria Montessori coined the term *Sopra Natural*, which in English might be translated as *Supranature*. It has nothing to do with *super* or *superior*, it just describes the part of the world which human beings had made on top of nature. Sopra means "on top". *Supranature* is the world constructed by man.

Maria Montessori was very much aware of the fact that supranature is now part of the total world. And she was aware of the danger connected with it. In *From Childhood to Adolescence*, she writes: "With machines civilization has given a power to man far superior to his own. But in order to develop the work of civilization, man must develop too. The ailment, of which our time is suffering, comes from a disturbed equilibrium which results from different development rhythms of man and machines."[5] This was written about fifty years ago. Today we experienced the threat of machines such as nuclear bombs or Chernobyl power stations. The text goes on: "The machine's development was accelerated, while he (the human being) ought to rule over it... We must teach the youngsters our task on earth. But this power, which is given to men by the machine, has to give him new duties, an ever higher developed morale."[6]

These words have an anxious ring in our times. We know today that our grandchildren may not have a world to live in, if we continue to act as we act now. Maria Montessori may not have known this as acutely as we do today. We must admire how she and her son and grandson, like visionaries, saw the problems. They also saw that it could only be through the human being, and through educating the human being, that we would overcome the crisis.

So Maria Montessori sees the problem with the man-made environment, but her conclusion is not to bar it from the class environment. She rather emphasizes its challenge to humans and she advises to introduce the children to that moral challenge.

To deal with a moral challenge is only possible if one understands the factual world. When we deal with the world being threatened we have to understand how all is linked together. Why has the explosion in Chernobyl been such a disaster? Because for centuries, or maybe millennia, that place will not be inhabitable again. If similar disasters happen in more places, this earth will not be available for our grandchildren. Why are the climate and weather pattern changing with catastrophic consequences on sea levels, floods, storms and draughts? One cause is the change in the atmosphere brought about by carbon dioxide exhaust from cars, homes and factories. If we keep burning the amount of carbon fuel as is done now, the world may not be a livable place for our grandchildren.

To act upon these problems means to understand them first. To act as a responsible citizen means to understand what the politicians are talking about.

All Particles Follow Physics Laws

We have discussed how physics provides key concepts about the inner workings of the cosmos. Those are the physics laws. The story *God Who Has No Hands* in its last line summarizes: "...the earth and all the elements and compounds of which it is composed, as they fulfill their task, whisper with one voice: 'Lord thy will be done.'"[7]

So, as early as in the first days of the elementary class Montessori brings in this idea of a law in nature, of a profound inner will in all matter, to follow the same procedures. This metaphor itself is an intriguing topic. Unfortunately, here is not the place to discuss it in detail. Such discussion is provided in my article in *Communications* [1994, 2/3][8].

Maria Montessori recognized that you can't just take for granted that there is law in nature. But it indeed turns out to be the basis of all harmony and therefore is so interesting to the children. The study of physics deals with those laws.

Follow the Child

Montessori profoundly counsels us to follow the child. She was well aware that children may exhibit deviations or interests which are superficial and not connected with the needs of the growing mind. So, "following the child" is not always easy. The real needs and interests revealed themselves to Maria Montessori by the phenomenon of normalization. Whenever an inner urge, a real need, was satisfied, the child would exhibit an extraordinary calm, happy and satisfied demeanor.

For our question it would then be necessary to observe children in this specific way. My own experience would verify that, if you introduce physics studies in an elementary class, the children respond to it like bees to a cake. Children seem to have a strong urge, feeling "this is dealing with the inner workings of my world, this is what I need to know, and this is fun for me". If you look at these materials (displayed here), you may imagine children being immediately drawn to manipulate, to explore its potential.

We may need more experience as an answer to the question, whether this exploration indeed leads to normalization. But we may also consider how Montessori shows us the inner urge of children to master their own environment, their own culture, their own world surrounding them. Physics provides topics which have to do with their life. Elementary children are keenly aware that it is important to them. They have a much keener sense for this than we do as adults.

Full Equipment

In *To Educate the Human Potential*, Maria Montessori says about the age of 6 - 12 years: "In this more advanced period we continue to afford children the opportunity to learn through the activity of the hand especially in mechanics and physics (!). For instance the children learn the laws of pressure and tension by being asked to build an arch of stones so placed as to hold together without need of cement".[9]

Some may still have that arch in their classes or training centers. It used to be part of the primary training: small wooden blocks which can be set up like a roman arch holding up without glue through the secret known in architecture since ancient times. The text goes on: "By building bridges, aeroplanes, railroads (calculating the curvature), they become familiar with the principles of statics and dynamics as part of the daily school routine, wherever our method is properly applied with full equipment".[10]

Please note that even then Maria Montessori had that threatening finger: Do you have the full equipment, is it properly applied?! And she counts among full equipment these things which deal with statics and dynamics and likely all of the other physics concepts.

We may ask, why then is it not implemented?

The elementary curriculum was developed in the first half of this century. The people working on it received their high school education in the late part of the last century. The school then was designed by adults who built their minds in the first part of the last century, and physics was not around at that time. Physics was not in the high school curriculum and it was not recognized as an important ingredient in education.

A Physics Curriculum

We have developed several reasons for which physics should be part of the second plane of development, when the mind awakes to reasoning, to responsibility in this world and all its workings. What are the contents of physics, those which we will put before the child in the prepared environment?

The lists on pages 67-68 attempt to provide the scope of this curriculum. The geography experiments in our present elementary curriculum are included in that list, marked by an asterisk. The static mechanics experiments *Simple Machines*[11], as displayed here before the audience, are listed too, marked by two asterisks.

The list is not meant to be a physics textbook. It merely tries to provide a selection and a classification for the teacher. It certainly shows the magnitude of the task: eleven sections, each with a rich selection of key concepts to be explored. It also provides some hints of materials to be used. If the scientific terms and formulas of the key concepts provoke discomfort in the reader, the lists of materials certainly show that implementation of all this is not beyond an elementary child.

Didactic Considerations

The didactic principles for presenting physics, as developed here, are derived from our geography experiments, a substantial part in elementary teacher training.

Why are these experiments listed in the geography album? They help the child understand the earth and how its features came to be as they are today. The earth could not be understood without knowing a few physics laws. But these laws may as well be of interest beyond geography and be studied in the wider context of physics.

The didactic principles followed in the classical experiments may help to implement a series of physics exploration.

Provide Keys

It is not recommended simply to procure books or kits of "physics for kids", providing activities that produce wondrous effects but do not really help the child to understand. Maria Montessori warns us not to clutter the classroom with just amusing materials, but to select exploration of key concepts. Keys are ideas which children need to further explore on their own. They are concepts needed to understand more complex issues.

Isolate Concepts

Let me, as an example, describe a giro: a wheel is supported by a frame with a string to pull which makes the wheel spin fast. Now you can put the frame on the tip of a pencil and it will stay in any position – quite a striking view. But if you want to understand why it is doing so, you might be lost. This is a toy, it is supposed to create curiosity, and for this it is fine. But the laws creating that phenomenon are not isolated. Several laws work together and they are not easily understood in this complex setting.

Try to set up apparatus which isolate laws. Offer activities where one concept is clearly experienced, i.e., where eyes and hands have a clear impression of one law only.

Another example: equilibrium might be explored by standing on one leg, but it certainly is easier studied with a lever like the one on display here. This one is set up to show a one to two relationship. The lengths of the arms are 2dm and 1dm, a 2:1 relationship. The weights are 100g and 200g, a 1:2 relationship. For 200g there are two weights of 100g each instead of just a thicker 200g piece. This is done to isolate the phenomenon which you want the children to explore – to create a clear impression of the equilibrium and its numerical relationships.

Provide Impressions, Big and Simple

Compare the geography charts. They are big. They are meant to be held in front of the child, not to be held up in front of the whole class. Why are they so big? To impress. And why are they so simple? For the same reason. We may consider the same ideas here too. Physics kits for children are not recommended; the apparatus is too small, it breaks easily, it is not accurate enough as soon as the child comes to measuring and calculating. These kits frequently use the same set-up for demonstrating different phenomena. So the pieces are more complicated and that clutters the impression.

Fortunately there is apparatus readily available, offered for high school physics. It is meant for demonstrating to a whole class, but it is just fine for our children to manipulate it themselves. It is available at science supply houses at a price level familiar to Montessorians when they buy the

cont'd on page 69

Key Concepts in the Physical Sciences

This is an attempt to sort out key concepts for presentation in the elementary class. Not each concept is meant to be advanced to the calculating level, some of them may merely be experienced in a sensorial way. But even with this cautioning remark, the scientific terms in their bare brevity and especially the formulas may look scary to a teacher who may not have the most friendly recollection of physics in high school. Unfortunately this is not the time and space to spell out each of these concepts into the simple reality they describe in such short terms. It should be stressed that these concepts can be experienced with experiments simple enough for 6-12 year old children. For many of them, apparatus is readily available at science supply houses.

Concepts not considered for the elementary class are still listed in order to keep the discussion open.

One asterisk (*) marks concepts introduced by geography experiments. Two asterisks (**) mark concepts for which teaching units are included in the set of experiment cards *Simple Machines*. They are an example of the ease with which experiments can be offered to children, once the scientific terms are translated into the reality of pulley and strings.

1. Matter

Materials:

- see the Geography Command Cards

Concepts:

- states of matter (properties, changes)*
- kinds of matter:
    - elements
    - compounds*
    - mixture*
    - solutions*
    - (see 11. Chemistry)

2. Static Mechanics

Materials:

- weights, scales
- simple machines: lever, pulley, inclined plane, friction board

Concepts:

- gravity,* mass, force (weight)**
- composition of forces**
- torque** ($T = F \times l$)
- equilibrium**
- center of gravity
- work** ($W = F \times d$)
- energy (forms of energy, law of conservation of E),** ($E = F \times d$)
- power** ($P = W / t$)
- friction**
- elasticity*
- density

3. Dynamic Mechanics (force and motion)

Materials:

- acceleration carriage, acceleration timer, skateboard

Concepts:

- velocity ($v = d / t$)
- acceleration ($a = dv / dt$), ($F = m \times a$)
- inertia
- action and reaction
- kinetic energy ($E = m \times v^2 / 2$)

Not included:

- momentum, impulse, circular motion (gyro), centrifugal force*, collision of masses

4. Heat

Materials:

- thermometer, thermos, Joule's Calorimeter, immersion heater, alcohol burner

Concepts:

- temperature (measuring)*
- melting*
- vaporizing*
- thermal expansion
- heat capacity
- specific heat* (calories necessary to heat 1g by 1°C; water: 1)
- heat as energy (forms of energy, changes), (1 cal = 4.185 J = 418.5 Ncm)
- law of conservation of energy
- transfer of heat (conduction, convection, radiation*)

Not included:

- sublimation, heat of fusion and vaporization, entropy, 2nd law of thermodynamics

5. Liquids, gases

Materials:

- air pump, manometer, steam kettle, ship, gas balloon, hot air balloon

Concepts:

- pressure ($p = F / A$)
- Pascal Principle (pressure on bottom proportional to depth only),* atmospheric pressure*
- volume & pressure (Boyle's Law)*, ($p \times V = \text{const.}$), (if you increase pressure on a gas, it shrinks in volume)
- volume & temperature (Gay-Lussac's Law)*, ($V_t = V_o \times T / 273.2$; T = temperature in °K), (if you heat a gas it expands)
- buoyancy (Archimedes' principle)
- viscosity*

Not included:

- mechanics of the weather, kinetic gas theory*, surface tension (soap bubble), capillarity*, friction in liquids or gases, fluids in motion (pressure at airplane wing)

6. Sound & Waves (vibration & acoustics)

Materials:

- pendulum, spring and mass, wave basin, monochord, organ pipe, siren

Concepts:

- period, amplitude, frequency, wave length
- wave motion
- wave speed
- stationary waves
- resonance
- interference
- proper frequency
- sound waves
- music and sound (pitch, harmony)

Not included:

- torsion pendulum, intensity, loudness

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7. Light (optics)

Materials:

light source, mirror (flat, concave), prism, lens, optical bench, ray box, camera obscura

Concepts:

- nature of light
- reflection:
    - plane mirror
    - spherical mirror
    - object / image / focus
    - virtual / real image
- refraction:
    - angle of incidence & angle of refraction
    - total internal refraction
- color
- diffraction on slit
- interference of coherent waves (destructive, constructive)

Not included:

luminous flux, intensity, illuminance, photometry, index of refraction, lens power, lenses in contact, aberration, formulas for diffraction

8. Magnetism

Materials:

magnets, compass needle, iron filings

Concepts:

- nature of magnetism
- magnetic field, sources of magnetic fields, field lines (closed)
- magnetic force*
- magnetic materials
- (more s. electricity)

Not included:

field strength, flux, energy in magnetic fields

9. Electricity

Materials:

electroscope, plastic rod and cloth, pith balls, battery, transformer, lamp, switch, wire, a-meter, v-meter, capacitor, resistor, coil, electrodes and container

Concepts:

Electrostatic:
- electric charge (Q in coulomb)
- repelling / attracting charges
- electric field, field lines (end in charge)
- electric potential, voltage, (U in volt)
- electric energy ($W = Q \times U$)
- capacitor

Electric Currents:
- electric circuit, current, (I in ampere)
- electromotive forces (EMF) (battery, coil), (U in volt)
- resistance (depends on material: resistivity / thickness / length), (R in Ohm)
- Ohm's Law ($U = I \times R$, or : $I = U / R$)
- electric power (P in watt: $P = U \times I$)
- electric work ($W = P \times t$)
- conversion of units
- currents in circuits (parallel, series, junction rule, loop rule)
- electrolysis
- volta element

Currents and Magnetism:
- magnetic field around a current
- resulting force (magnitude, direction, hand-rule)
- motor
- induced EMF
- self-inductance, Lenz's Law
- generator
- alternating current
- transformer

Not included:

Coulomb's Law, electric field strength, energy in capacitor, resistance depending on temperature, internal resistance, Faraday's Law in electrolysis, electrochemical equivalent, circuits with inductance and capacitor, details of alternating currents (amplitude, phase, effective current, power-factor), reactance, impedance, resonance in circuits

10. Atoms (nuclear physics)

Materials:

atom model, chart of elements

Concepts:

- Bohr's atom model, parts (nucleus, proton, neutron, electron, ion, isotope)
- forces, binding energy
- nuclear charge and atomic number
- chemical behavior
- system of elements (Periodic Table)
- radioactivity
- radiation
- emission of light
- fission
- fusion

Not included:

nuclear equation, radiation measurements, accelerators

11. Chemistry

Materials:

chemicals, glassware, molecule models

Concepts:

- element, compound*, chemical reaction*
- acid, base, salt
- acid-base reactions
- oxidation
- (covalent, ionic)
- valences
- Chart of Elements and Chemical Properties
- carbon compounds (organic chemistry)
- chemical equations
- energy and chemical reaction

Not included:

details in organic chemistry, amounts in chemical reactions

◆ ◆ ◆

The following sections are added for the sake of completeness and as a base of discussion. They contain concepts frequently used in modern society, science fiction and environmental discussions and which are crucial in shaping a modern view of the world. But these concepts are difficult to explore on a sensorial level in the lower elementary class.

◆ ◆ ◆

12. Relativity

Concepts:

Einstein's Special Theory of Relativity: all motion is relative, speed of light is constant for each observer

Consequences:

- The mass of a given object varies for each observer according to his speed
- So does the length (length contraction)
- No speed can exceed the speed of light
- Mass and energy are related ($E=mc2$)
- Time is different for different observers (time dilation)
- Simultaneity depends on speed
- The velocity of a bullet is not exactly the sum of its speed relative to the gun and the speed of the gun

13. Quantum Physics

Concepts:

Light wave as particle, particles of matter as waves, the inadequacy of human imagination in subatomic dimensions.

trinomial cube or the grammar boxes. These high school or college demonstration materials are big, sturdy, accurate and provide clear impressions.

Provide Manipulative and Sensorial Opportunities

As Montessorians we know the secret of aiding young elementary children to study difficult concepts such as the distributive law or the analysis of a sentence. The secret is to provide manipulative and sensorial opportunities. The same is true in physics. The chalk-and-blackboard approach of high school is a sin against a wonderful and exciting science. A child needs to pull the string from a pulley with her own hand. She needs to feel the change in force, she needs to set it up in order to deeply understand the arrangement. The big and sturdy equipment designed for presenting to high school classes is perfect for the hands of elementary children.

The Teacher Presents, Then the Child Manipulates the Material

There are two misconceptions in dealing with the apparatus in a Montessori class; one, it is not productive just to have the materials all waiting on the shelf for the child to take them and figure out what to do with them. It is also not productive to prompt the child through the manipulation.

When the teacher presents, it is her turn. She is the performer; she must present in a clear, straightforward way. But then she must leave the children alone, so they have a chance to manipulate on their own terms, either repeat what was presented or explore other ways.

The teacher's presentation must be carefully planned. I had pointed to the two pieces of weight at this lever. If the children later on do their own activities, they may take any weight which balances the lever. But for the first presentation a well planned impression is important. In many instances there are number relationships. It is important for the first impression to show the simplest possible relationships. At this lever a 1:2 relationship of arm lengths and weights is easiest seen and understood immediately, almost intuitively. There is no need to talk about numbers, fractions and ratios.

Presentations must be planned according to these principles.

Activity Cards

Unfortunately there is no teacher training for physics. To present the materials in the way the checkerboard is presented, i.e., every step lectured in detail with an album produced, a training for all the eleven sections outlined on the enclosed list would certainly take more time than is available in workshops or conferences. In this situation I have produced a set of activity cards.[12] Their purpose is both to assist the child and the teacher.

In principle I would not suggest having the classroom saturated with command cards. They take away the spontaneity of the child's work and of her access to the material. But when it comes to sections of the curriculum where there is no training, some advice is necessary. Activity cards may be a helpful compromise.

These activity cards follow the principles as followed in the geography activity cards. There is a list of the materials, so the child is independent to go and gather them. Then there is a list of commands, advice on what to do. There is also a statement, some answer the child may find as a result of the activity. The statement may be cut away in order to produce a card set where the statements are on separate cards. I have also provided another section on each card – an explanation.

Employ the Reasoning Mind

The second plane of development is the time, when the children's minds are eager to reason, as opposed to the first plane, when the children's minds are so ready to absorb. Each physics activity may lead to a clear understanding. There will be a sensorial phase, so we do not start with the reasoning right from the outset. There should be the enjoyment of just looking and manipulating. But reasoning eventually is part of physics.

The sensorial impression could be produced with very simple household items. For a lever all that is needed is a broomstick and a bottle. However, in the elementary class you want the children to proceed to measuring and calculating. With household items, precise measuring is impossible. There are too many imponderabilities, too many inaccuracies. We need apparatus that is as accurate as possible, that eliminates side-effects, such as friction, dead weight, etc.

Formulas

Physics exploration will not be complete without arriving at measuring and calculating, finally using physics formulas. Mathematics is an integral part of physics. That does not mean this is so at the beginning. If sensorial physics exploration is set up for six-year-olds, they may wait one or two years until starting to measure and calculate, depending on their math skills. The activity cards provide a section for sensorial exploration and another one for measuring and calculating.

Summary

The science of physics deals with laws followed by all nature. In our present elementary curriculum there are experiments providing key ideas as an aid to understanding the development of the planet earth. A more systematic and complete approach to physics is desirable. Maria Montessori can be read in many dimensions as advising to have physics exploration as part of the prepared environment:

- Her understanding of cosmic education, the plan for the elementary class, certainly includes physics as the science of the laws in nature, which are obeyed by all particles.
- The cosmic task of human beings necessitates comprehensive knowledge of the processes in nature.
- In following the child we recognize the children's own eagerness to study physics.
- Maria Montessori wants to have her method properly applied with full equipment, including studies of statics and dynamics.

Once the need to implement physics is recognized, a curriculum must be drawn up. The lists on pages 67-68 should be the first step in this process.

They also provide a first step towards such a curriculum.

Didactic principles are gleaned from the geography experiments:

- Provide key concepts
- Isolate concepts
- Provide clear and simple impressions
- Provide manipulative and sensorial opportunities
- The teacher presents, the child then manipulates the materials
- Activity cards are a helpful compromise
- Employ the reasoning mind
- Sensorial experience is at the beginning, but formulas are eventually an integral part of physics.

Materials that can be used for physics exploration in the Montessori class are readily available as high school or college demonstration materials. They need, however, clever choosing and arrangement.

I have not addressed the issue of physics in the *Casa dei Bambini*. While other principles may guide the implementation there, it still is an important issue and many ideas discussed here apply.

The guiding principle for all these issues must be the full development of the child and our efforts to provide an aid to life. ◆

Sources for science materials:

Science Kit & Boreal Laboratories
777 East Park Drive
Tonawanda, NY 14150-6782
Tel: 1-800-828-7777

Fisher Scientific
Educational Materials Division
4901 W. LeMoyne St.
Chicago, IL 60651
Tel: 1-800-621-4769

McKilligan Supply Corp.
435 Main Street
Johnson City, NY 13790-1998
Tel: 1-800-882-5500

Nasco
901 Janesville Ave.
Fort Atkinson, WI 53538
Tel: 1-800-558-9595

Carolina Biological Supply Co.
2700 York Road
Burlington, NC 27215
Tel: 1-800-334-5551

Sargent-Welch Scientific Co.
7300 N. Linder Ave.
PO Box 1026
Skokie, IL 60077
Tel: (312) 677-0600

Central Scientific Co.
11222 Melrose Ave.
Franklin Park, IL 60131
Tel: 1-800-262-3626

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NOTES

[1] Maria Montessori (1948), *To Educate the Human Potential*, 5th edition 1973, Kalakshetra Publications Press, Madras, India, p. 4.

[2] Ibid.

[3] Ibid, p. 2.

[4] Mario M. Montessori (1976), *Education for Human Development, Understanding Montessori*. Schocken Books, New York, p. 105.

[5] Maria Montessori (1948), *From Childhood to Adolescence*, revised English translation from the French original, 1976, Schocken Books, New York, p. 116.

[6] Ibid.

[7] Mario Montessori retelling Maria Montessori's tale *God Who Has No Hands*, *AMI Communications*, Christmas 1958.

[8] Peter Gebhardt-Seele, *Metaphysical Implications in Maria Montessori's Great Lesson of "God Who Has No Hands"*, *AMI Communications* 1994, 2/3.

[9] Same as 1, p. 11.

[10] Ibid.

[11] Peter Gebhardt-Seele, *Simple Machines*, a set of activity cards for exploring static mechanics, available from the author.

[12] Ibid.

Montessori Research: Recent Trends

Mary Maher Boehnlein, Ph.D.

Intense interest in the results of Montessori's scientific pedagogy has been present since she published the results of her first work. At first the world flocked to her *Casa dei Bambini* and was convinced of the value of the pedagogy by their immediate and personal observations of the children in the Montessori environment. Then replication of the methodology and environment across the world brought numerous anecdotal reports of similar results. Within Montessori's lifetime, however, the movement to document educational results with more exacting scientific rigor began to prevail and the original ethnographic, observational, anecdotal approach to research was not enough to satisfy the larger educational and social science community. The newer approaches of testing, measuring, assigning numerical values to human performance permeated the psychological and educational departments of universities and Montessori's work was not immune from demands for "true scientific research evidence."

Availability of such "scientifically" documented research was limited to the few persons who had time and the inclination to not only take such measurements of learning but also who believed Montessori "could measure up" using the same yardstick used in evaluating other educational programs. The popularity and growth of educational testing has grown until today. Even traditional educators are voicing concerns that accepted methods of reducing learning gains to numerical quotients that can be statistically manipulated, however advanced, do not capture either the essence or the wholeness of educational efforts.

Albeit, once the Montessori pedagogy moved into the public funded sector of the North American continents, it opened itself to sometimes exasperating, detailed, and a somewhat out of focus evaluation. Exasperating and out of focus because Montessorians are not short term results oriented. Rather, the Montessori philosophy of education is fixed on long term objectives and goals. While Montessorians believe that academic achievement aids in the evolution of humans and civilization, they also believe they are touching lives in a way that allows learners to propel themselves to fulfillment through a personal life style that contributes to a peaceful world. Such results are not readily measured by children's academic achievement as children but instead must wait until the child has reached adulthood and lived as an adult in their society. This "cosmic education" view is often ignored and researchers seem only interested in the "numbers" on achievement tests. Even the more recent acceptance of ethnographic research methods, which try to capture evidence of those things that simply cannot be quantified and manipulated numerically, have rarely met the higher standards that Montessorians have set for judgment of their approach to education.

Still in all, Montessorians have cooperated with those who want to capture a bit of what they do and are as anxious to view the picture others have taken of them as any human who has been photographed. Might there be a bit to learn from these glimpses into research of Montessori education?

Do Montessorians read the research and use it to enrich what they do? Our experience indicates Montessorians are interested in the measurements of their efforts and especially in the long term results. Some Montessorians have even become researchers themselves in order to present a more accurate picture to the wider educational community. The North American Montessori Teacher's Association (NAMTA) has been the initiator of cataloguing, summarizing and preserving this research since it first supported the work to gather all sources published in English by and about Montessori in a history of Montessori research by Boehnlein in 1988, and in the two bibliographies (Boehnlein, 1985 & 1995). In addition two other publications summarized research in useful implementation manuals for private and public educators (Kahn, 1988 & 90).

The purpose of this paper is to review and update the state of Montessori research since the original *NAMTA Montessori Bibliography* (Boehnlein, 1985) and to add studies not included in the 2nd edition of the bibliography which were not available at the time of publication or which have been published since 1994 through 1995.

Areas of Research Interest

Table 1 (p. 72) demonstrates the shift in areas of investigation, some quite dramatic, and some clearly expected from current trends in traditional education and psychology. We found 271 research studies and 28 reviews of research literature were published between 1909 and 1985. This was much more than we had anticipated but it did show an abiding interest in Montessori education even during the time it was nearly nonexistent in North America. The categories or topics reflect the research interests of researchers in psychology and education in Montessori's theory of education with the philosophy underlying that theory behind a major area researchers wanted to understand. Related to that area of interest were investigations of the theory in practice with questions such as:

1. Did individual educational programming and individual work among preschool children inhibit a perceived need for the socialization of preschoolers through group activities?
2. Did the Montessori approach really work with children who did not have the experiences of the child from more advantaged socioeconomic circumstances regardless of race or ethnicity?

Table 1 – Summary of Numbers of Research Studies in Two Time Periods
1909-1985 and 1986-1995

TOPIC	NUMBER OF STUDIES 1909-1985	NUMBER OF STUDIES 1986-1995
Academic Achievement	47	17
Adult Education	0	1
Anthropology	1	0
Art	1	2
Body Concept	2	0
Child Development	0	2
Cognitive Intellectual Development	25	5
Creativity	2	3
Curriculum	4	5
Erdkinder	0	3
Evaluation	0	1
General Descriptions	8	11
Infant / Toddler Education	0	1
Language Arts Curriculum & Methods		
• *Second Language/Bilingual*	1	1
• *Education*	1	1
• *Grammar*	1	0
• *Materials*	1	0
• *Reading*	7	8
• *Writing*	1	5
• *Spelling*	0	1
Learning	0	1
Mathematics	3	3
Methodology / Pedagogy	22	0
Normalization	0	1
Montessori Theory	16	10
Moral Development	4	0
Motor Skills	1	1
Music Education	5	1
Parents	0	3
Play / Fantasy	0	3
Practical Life Curriculum	0	2
Public School Montessori	0	7
Peace Education	1	2
Perception	4	0
Personality Development	4	0
School Administration	1	5
School Readiness	5	0
Science Education	4	0
Self Concept	5	2
Sensorial Curriculum	4	2
Social Skills	13	4
Socioeconomic Status	25	0
Sex Role Development	0	1
School Architecture	0	1
Special Education	17	1
Teachers / Teaching	27	19
Television	0	1
Toys	2	0
Task Persistence	3	2
TOTALS	**271**	**138**
Reviews of Research	28	9

3. Did children experiencing Montessori's concrete materials show more learning on achievement measures?

4. Did the Montessori approach produce children who scored higher on intelligence tests and other measures of cognitive functioning?

5. Did Montessori teacher training change both teacher beliefs and instructional practices? In other words, did adults really believe one could provide an environment of beauty which encouraged choice, movement, social interaction, and developmentally appropriate activities that led to enhanced and earlier learning of abstract concepts and ideas?

6. What were the Montessori methods and how did they work?

Between 1985 through 1995 an additional 138 research studies were located and ***Table 1*** reveals a continuing interest in Montessori theory, teachers and teaching, Montessori in a public educational setting, and the Montessori approach to literacy education. Some areas receiving increased study were creativity, Montessori education for the adolescent (*Erdkinder*), working with parents, the value of the Practical Life area of the Montessori curriculum, school administration, and application of Montessori educational principles to the education of adults. A final interesting phenomenon are the increasing number of Asian students completing dissertations in the United States but doing their research in Montessori schools in Japan, Korea, and Hong Kong. This reflects the rapid expansion of Montessori education in these countries and the increased number of Asian graduate students pursuing advanced degrees in the United States.

Results of Selected Studies

Achievement/General

Since 1984 there have been 17 studies of general achievement, three specific studies of mathematics education and achievement. Of the general achievement studies eight were done in the public schools. While a few studies looked at academic achievement from the perspective of how much gain children made compared to non-Montessori children, others were interested in factors influencing achievement such as how achievement is monitored, differences between racial groups, and if higher self-esteem was engendered among Montessori students because of freedom of choice and the environment and subsequent affects on academic achievement.

Bent (1989), examined four Montessori elementary classes, two kindergartens, a first grade and a second/third grade combination. Compared to traditional classroom evaluation procedures, she found the Montessori teachers emphasized assessment of children's independent and group problem solving growth, the progress of children's ability to work in a socially collective manner to problem solve, and used more non-test type measures of assessment and evaluation such as journals, charts of progress over time on a scale of teacher demonstration to child's internalization or mastery of concepts and skills. She found that Montessori teachers believed and practiced a view of teaching as guiding, facilitating, and collaboratively evaluating with the child and parents contributing to the evaluation and assessment process.

Boehnlein (1992), compared standardized test scores of students in traditional schools with students in the Montessori program. She found that Montessori students consistently achieved significantly higher mean scaled and NCE scores than the traditional students except on the grade four mathematics sub-test where there was no significant difference. Additionally, at the sixth grade level, while Montessori students scored higher there was no significant difference between them and the traditional students. However, closer inspection of the data revealed that there was a higher amount of variance in the scores of the Montessori group which were found to be due to the number of students admitted to the sixth grade Montessori program who had no previous Montessori experience. She speculated that if these students' scores were removed from the data, the sixth grade Montessori cohort would then have significantly higher scores than the traditional students. The results of this study mirror results from other public Montessori magnet school programs across the U.S. which consistently show Montessori students outscoring students in traditional classrooms. In Lorain city schools, the Montessori mathematics scores on the standardized test are the highest in the district's history, even outscoring the gifted and talented program children.

Curtis (1993), investigated the extent of differences in the test scores of urban elementary students in a public Montessori program and SIGHTS Program on the *Metropolitan Achievement Test, Sixth Edition*. The researcher was interested in determining the effects of the variables in the instructional programs, gender, and ethnicity on elementary students' achievement. This was an *ex post facto* design which meant it did not have any pretest data to show rate or amount of gain between children in the programs. There were significant differences among ethnic groups within each program with African-American and Anglo children achieving higher scores on the mathematics test than Hispanics in the Montessori program, while Hispanics in the SIGHTS program had better scores than African-Americans or Anglos. Hispanics in the SIGHTS program scored higher than Hispanic children in Montessori but not better than Anglos and African-Americans in Montessori. Montessori elementary students scored better on the writing section of the MAT than did the SIGHTS elementary students.

In another study conducted in Texas, Dawson (1988), found that African-Americans and Hispanics in a public Montessori program in the Houston public schools did not score as high as Anglos but did score significantly higher than African-Americans in the traditional educational settings suggesting that the Montessori program is advantageous for minority students. The Montessori students showed superior performance on all sub-test topics at all grade levels of the Montessori elementary program. Years-in-program showed a steady increase in above grade level achievement with the fifth year students showing the highest gains – two years above their peers in the other Houston public schools.

Fuller (1994), studied the effects of implementing a Montessori program in the Buffalo, New York schools. She found the children in the Montessori elementary program scored higher than the mean of the district scores on the standardized test and were evaluated as having higher self-esteem and a sense of community. Although the Montessori school enrolled 50% minority students through an annual lottery process the district did not aggregate its test data by racial groups to compare results of its programs. Fuller did note that district data had shown that mixed-aged grouping and enrolling the children in the school at age two and a half contributed to the greater achievement. Cisneros(1994), on the other hand, found no significant differences at the end of third grade on the *Iowa Test of Basic Skills* in reading, attendance rate, promotion rate, self-esteem or parent involvement in another public Montessori program. The abstract of her study does not indicate the quality of the Montessori school or if it contained the standard pre-kindergarten Montessori program.

These research of studies of achievement indicate an overall positive advantage for the Montessori approach both in academic learning and in personal attitudes and habits that contribute to higher achievement. The generalizability of the results, however, is limited due to the variance among the various programs in terms of type and depth of teacher training and the quality of the implementation of the program, particularly, in the public sector.

Achievement/Mathematics

Baker (1988), investigated elementary children's interpretation of subtraction of children experiencing the Association Montessori Internationale (AMI) curriculum as implemented by an AMI trained teacher. Forty-four children ages 6.5 and 7.5 in three schools were interviewed individually for 30 minutes in January and February to

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determine their understanding of mathematical concepts and problem solving. She found a wide range of understanding and achievement between the two age groups. Some could perform abstractly while others had only an intuitive concept of how to solve problems. Nearly all had the concept of subtraction as: "take away" rather than one of difference between two amounts. Most could not do missing addend problems. Baker concluded that children may not be using the concrete apparatus long enough to build concepts – for example, even though children could identify the place values of the golden beads, they had difficulty collecting 124 beads using the place value bead material. Additionally word problems were solved by simple counting numbers as single digits. When problems used two digit numbers, even with the golden beads available, the children had difficulty and few solved the problem with non-counting techniques. Even children who were able to use the subtraction algorithm still demonstrated their solution with the concrete materials.

Baker speculated that the transfer of the concepts learned using the golden beads might need to be extended to real objects – thus helping the child understand and make the passage from their informal mathematical ideas to the formal structures that assist them in solving problems beyond the counting domain.

The implications of Baker's study are that children vary enormously in their construction of understanding which presents an issue of too much teaching or not enough teaching. Concrete aids to understanding seemed to be withdrawn too soon in a rush to move children to symbols in the schools she studied.

Hsu (1987), studied the Montessori methods for learning number concepts according to Piagetian theory and current research on children's mathematics learning. She found Montessori's ideas were correct more often than not but noted some inadequacies in patterning activities, function of classification, one-to-one correspondence, multiplication sentences, and estimation of children's competencies in number. Piaget's theory of number was found to fall short of findings of current research. She prepared a model which integrated the best of all three sources and tried using it in a traditional nursery school/kindergarten in Taiwan for 30 children in two age groups, three to four and five to six. She judged the model inadequate without direct translation into specific lesson plans.

Curriculum and Achievement

Related to the above studies are those that compared the results of children experiencing different curricula. Researchers asked if there are differences in the implementation of the curricula, and how aware administrators are of the variety of curricula available to be implemented. Beaton (1991), polled three groups of educators – early childhood experts, Montessori experts, and Montessori teachers – about the essential and unique characteristics of the Montessori curriculum in America. The participants were provided a list of characteristics and rated each on a scale of not essential or unique to very essential and unique to Montessori. The second Delphi round consisted of a modified questionnaire reflecting the responses from Round I and Round III using a technique called StoryTech to elicit narrative responses. By the end of Round I there was consensus on 37 essential and 16 unique items. Overall the Montessori teachers were interested in the effect of conventional practices on Montessori curriculum while the early childhood education experts were interested in how the Montessori curriculum would be modified to fit into the developmentally appropriate practices adopted and defined by conventional early childhood education. Thus, while Montessori had unique and certain essential characteristics, some were seen as not developmentally appropriate by others but which are viewed by Montessorians as developmentally appropriate according to Montessori's theory of child development.

Freedman (1985), also did a questionnaire study to proprietary schools known to the San Diego Department of Social Services to determine the match between their curricula and that recommended by a search of the early childhood literature. All believed that all children should develop their full potential in the areas of social, emotional, physical, and intellectual growth and Froebel, McMillian, Montessori and Piaget were the theorists listed as influencing their curricula.

In another study, Evans (1989), sought to determine the knowledge level of distinguished elementary principals in the United States regarding Montessori, Individually Guided Education, Open Learning, and Traditional education, and the perceptions of the principles regarding these four curricula. The data indicated that principals knew more about Traditional Education than Open Learning, Individually Guided Education, and Montessori. Principals knew the least about Individually Guided Education and Montessori education thus indicating the principals were distinguished in the limited sphere of traditional education.

Achievement/Self-Esteem/Cognition

Starskey and Chester (1988), did a follow up study of children in kindergarten, first and second grade who had attended Montessori preschool. They wanted to determine if the early educational experience influences the maintenance and improvement of academic abilities and fosters a positive self-esteem. Using the Coopersmith Self-Esteem Inventory and the Peabody Individual Achievement Test (PIAT) with 21 children, they found that when children attend Montessori school for three to four years, 100% of them score in the 90th percentile on the PIAT whereas children who are withdrawn from Montessori preschool before the three year cycle is completed did not score as high. Only 50% of the children who attended Montessori for only one year reached the 90th percentile and as second graders they remained at the same level in second grade. All children who attended Montessori through second grade were at least in the 75th percentile. Results of the self-esteem inventory on 13 children, eight years and older, showed that none were below the

50th percentile, 92% were at the 68th percentile, and 62% were at the 95th percentile or two standard deviations above the mean. While the sample is small it does indicate that the more Montessori experience the child has, the higher the self-esteem and achievement levels on standardized tests. This study has similar results to that of Takacs and Clifford (1988), who did a follow-up study of inner city children who later attended the Cleveland Public Schools in the traditional program. Their data showed that children who had the full three years of Montessori preschool did significantly better than their peers on the standardized test and were rated as having parents who were more involved in their education than those of their peers.

In a study conducted in Taiwan, Cheng (1993), compared the Montessori method to a unit-structured program. Using matched pairs and quantitative and qualitative measures, she found no program differences in IQ, cognitive development, and adaptive development. Children in the unit-structured program progressed more than the Montessori group in the subdomain of personal-social development-expression of feelings/affect while the Montessori children scored higher in coping. Montessori children improved more than the comparison group in task-attentiveness.

Adolescents/Erdkinder

An area of Montessori receiving increased attention is the expansion of Montessori education to the early adolescent years of ages 12-14. Long (1994), did a survey of Montessori adolescent programs published as a special edition of the *NAMTA Journal*. Long documented the current state of adolescent programs in Montessori schools of North America attempting to provide a snapshot of the schools and to determine if there are key materials/experiences and the aspirations of the adults guiding these programs as they understand their work in light of Montessori's *Erdkinder* essay.

Eighty schools on the NAMTA membership were mailed a questionnaire with 38 (or 48%) responding. Four public and twenty-nine independent schools, thirty-one in the US, one in Canada and one in Mexico. Most referred to the program as an adolescent program rather than a Montessori adolescent program.

Four offer programs through age 18. The longer the program has been in existence, the more elementary children remain in the school. Retention in the adolescent program is related to age of program – older programs have about 85% attrition while newer ones experience about 10% attrition. Surprisingly, programs of five to nine years experience lose about 16% of their students. Attrition reasons are many and varied but some included need to get the child into the real world, the freedom in the Montessori school being a bad match for child, the desire for enriched sports opportunities, moving, tuition costs, etc.

Most schools have guidelines for accepting non-Montessori students and limit the numbers to 15-20% of the class. Students' strengths observed when students leave for a high school were academic background in mathematics, science, writing, thinking and study skills, and personal attributes of self-discipline, confidence, independence, and social skills.

Problems encountered were acceptance into a new peer group and encountering grading, test taking, lack of challenge, increased homework, book bound instruction, whole group instruction, lack of freedom, and lack of some math and grammar knowledge.

Teacher training was an area of concern because there was no Montessori adolescent training available through AMI and only one American Montessori Society (AMS) course which began in 1993, although there are others in process. Only 35% of the adolescent teachers were Montessori trained and these were usually elementary trained for ages six through twelve. Schools employ specialists in a variety of curriculum areas but mostly in art, music, reading, languages, physical education.

The study contains lists of key materials and key experiences. The farm experience or the *Erdkinder* experience is incorporated in a limited manner by most schools but others have replaced the farm experience with activities such as community service, business, mentoring, natural world, or group encounters.

Another study of adolescents was done by Epstein (1985), in which he described the perceptions of meanings and the enactment of patterned behavior among Montessori teenagers. Using ethnographic techniques, Epstein found that the students' cultural affairs took place within and between friendship groups. These friendship groups consisted of those who were deemed to share various degrees of compatible personalities and moods and who were considered trustworthy to not betray private information. Some friends were less trusted than others. An interesting factor that emerged in this study was that the teens daily tested each other's willingness to hold information confidential. Those who failed to maintain confidentiality were disliked and not trusted.

Bodi (1987), proposed a curriculum based on the educational philosophy of Montessori for the education of young adolescents, ages 12-15, which would form the basis for a mid-adolescent, ages 15-18, program. Bodi based his curriculum on empirical studies which suggested a specific program for adolescents needs to be based in natural human development. Montessori sources accessed include Montessori's lectures on cosmic education and her lecture on the *Erdkinder*.

Adolescent Education and Self Concept

As part of Coe's (1989), dissertation evaluation of the School of the Woods middle school program, the Piers Harris Self-Concept Inventory was given to middle school students. All but one student had taken the same test two years previously. The mean and mode scores were in the 8th stanine, indicating a very high self-concept score for this age group. All students gained in self-concept in two years with one girl doubling her test raw score. The most growth was seen in the 8th graders and girls' growth was slightly higher than the boys. One hundred percent said they were happy persons, that they thought they would be an important person when they grew up, they were lucky, liked being the way they were, were different, were good persons, could be trusted, liked school and were good at school work, were smart and were important members of their class. The majority reported worrying a lot, crying easily and not having a good figure. Coe's dissertation describes the school curriculum in detail and how it has applied the Montessori educational approach to teenagers.

Computers and Music

Sun (1993), equated characteristics of the computer with mouse-operated software commands, color graphics, animation, sound quality and programs that are self-teaching, self-administered and self-corrected with the Montessori teaching approach. She developed a computer program, *Kid's Premusic*, which featured four activities with each lesson; improvisation, composition, sight-reading, and ear training. Children were offered opportunities to explore the sounds and choose the matching icons in the order they preferred in the first stage of composition. During activities in improvisation and composition, children were exposed to visual and aural stimuli and reinforced for their perception of sounds and icons – a stepping stone to the understanding of symbols. A Macintosh computer with 14-inch color monitor was used by a class of 23 three to six year old children. At the end of the study she administered a Transfer Test which contained 33 questions.

The results of the test and the evaluation of the classroom teachers suggested computer assisted instruction in music was feasible. The visual representation of the notation affected the subjects' attitudes towards their products and the combination of visual and aural feedback affected their compositional style. The data did suggest the children had difficulty in transferring the visual icons to aural stimuli as well as in learning rhythm.

Creativity

A persistent and long standing criticism of Montessori preschool education is that because of its structured way in which certain activities are performed by children and the emphasis on cleanliness and orderly, approved use of the materials only for the purpose of the specific activity – the long rods used only to develop sense of length are not allowed to be used for block play – and the use of real housekeeping items rather than play items – the child in the Montessori environment would have their creativity stifled. Rose (1990), examined the effect of Montessori preschool education on the divergent thinking skill of kindergarten-age children. She presented research which criticized Montessori education for its lack of open-ended materials and fantasy play. The 31 kindergarten subjects were assessed using the *Torrance Test of Creative Thinking-Figural A*. The results indicated above average performance on overall scores of the test with performance on some sub-tests suggesting that divergent thought was affected by the Montessori curriculum.

Rush (1984), however compared the Open Education model of preschool education with Montessori with respect to the development of fluency, originality, and imagination. One hundred fifteen three and five year old children in suburban Philadelphia were given pre and post tests in creativity. There were no significant differences between the two models or the two ages for any of the abilities tested but there was a significant interaction between model and age for fluency. Montessori three year olds scored higher than the five year olds in Open Education. In originality, significant differences were found within each of the individual programs and no differences were found in imagination. The researcher concluded that Montessori children were not less creative and that neither approach could be considered superior in developing the three creative abilities researched.

Shaw (1989),explored the use of guided imagery as a curriculum strategy in a whole language Montessori elementary classroom. Children ages 6-8 were trained in guided imagery practices, twice a week for seven weeks, one and half hours a session with subsequent drawing and writing. The researcher concluded that guided imagery increases creativity in literacy learning, helps promote integration of the whole language curriculum, and is a valuable strategy for whole language classrooms.

The majority of studies cited in Boehnlein (1988), did show that Montessori children from a variety of socioeconomic levels and schools scored higher on multiple measures of creativity. She concluded at that time that research had not demonstrated that Montessori children were less creative and the current research seems to confirm this view.

Development of Autonomy

Davenport-Paige (1987), reviewed the literature to determine what various theorists believed contributed to the mature mind and compared these to Montessori's beliefs. She concluded the theorists agreed upon five elements that impeded growth or fostered it: family, religion, education, separation and individuation, and moral reasoning. She concluded that there was a need for children to experience a consensually validated conceptual framework informed by research and humanistic philosophy if they were to develop a mature mind and function well in society. All the elements were considered present in the Montessori approach to education which stressed home school cooperation and a collaborative community in the school.

In a study asking a very similar question, Kendall in 1992 wished to discover the elements of the Montessori program which may affect the development of autonomy. She observed two classrooms, each with 30 third graders for two months in a Montessori public school program and a traditional public school program. Elements she considered were the classroom physical space and furnishings, educational materials used, teaching procedures, and the role of the teacher in relation to the learners. She used the *Classroom Autonomous Behavior Checklist* and independent observers to obtain her data. Her research showed that the Montessori environment and teachers fostered significantly higher levels of independence, initiative, and self-regulatory behavior. The Montessori children initiated more social interaction and employed more varied approaches to problem solving and task completion. Overall the children seemed more highly motivated in all aspects of their school experiences.

Marilyn Bull (1988), in an educational philosophy study, examined personal and social autonomy as a legitimate educational commitment. She concluded that the cultivation of rationality and morality in conjunction with autonomy serves to protect human beings and their social groups from excessive pressures toward heteronomy and standardization. She recommended protecting and fostering autonomy in the classroom.

Feltin (1987), viewed autonomy from the perspective of encouragement of independent learning through a prepared environment and the skill of the teacher. She collected data on each student in three Montessori elementary schools in the Seattle area and through a questionnaire on each of the teachers. She also observed the classrooms to assess the physical and underlying structural climate. After using correlation to see relationships she found the environment to be the most significant factor in encouraging independent learning and self-directed study. Student background, specifically sex, age, and previous Montessori experience and the teaching experience in Montessori of the teachers were not as significant in predicting independence. Perhaps a more detailed analysis of how the teacher helped the child access the environment would have revealed a significant factor, however, this was not addressed in the study.

Parent Education

Padovani (1985), planned and conducted a series of parent education workshops which focused on self-esteem, the prepared environment, self-discipline, and sensory-motor skills. Children were observed in their classes pre and post workshop to see if the parents' participation would positively affect children's behaviors in the classroom. Statistically significant gains were made by children of attendees in self-esteem, self-discipline, and sensory-motor skills even though there were only very low correlations between children's improved behaviors and parents' increased knowledge for the four workshops. This suggests that the classroom environment itself may be the crucial factor in changing children's behavior. This is one of the few studies to report changes in children in Montessori schools using Montessori criteria rather than a standardized test of achievement.

Play

This study observed children in a Montessori and a play-oriented program to see which curriculum embodied the competencies required in a Thai curriculum. Tovikkai (1991), found that children in a play-oriented program had more opportunity to develop competency in language, social science, motor skill, eye-hand coordination, shape and size recognition and discrimination, creativity, problem solving, and imagination than did children in a Montessori program. Children in the Montessori program had more opportunity to develop competency in mathematics and science than did the play-oriented children. She concluded it would be necessary to combine activities from both programs in order to implement Montessori in Thailand.

Play Versus Fantasy

Torrence (1992), was interested in why children continued to instigate pretend play in the Montessori preschool classroom despite her best efforts at redirecting children toward a carefully prepared, reality-based curriculum and despite their obvious interest and enjoyment of the prepared environment materials. She noted that according to Montessori theory this was not supposed to happen if the child was provided real world experiences, yet Montessori had also said *follow the child*. She asked herself if she should follow the theory or attend to the hinge on which that theory swings?

She decided to observe the child by creating a space in the environment in which pretend play activities were provided for and sanctioned. Play materials were simply another option among the standard practical life, cooking, and perceptual-motor activities and the outdoor large muscle apparatus. However, she was concerned about this decision and decided to see how other Montessori teachers handled pretend play.

A questionnaire packet was mailed to directors of 100 AMS affiliated schools asking administrators to give the questionnaires to three teachers with at least three years of classroom experience since completion of their training. Questions dealt with the length of the school day, length of designated work time and whether or not they witnessed unsanctioned play occurring during the designated work time. It also asked teachers to identify the classroom areas in which play occurs, how they intervened and if any play materials were included in the environment.

One hundred forty-four questionnaires were returned, a low 8% return rate, of which 16 were disregarded for various reasons. Data from 128 respondents were used in the study. Results revealed that standard play materials are seldom included in the Montessori classroom environments. If included, the most frequently cited were blocks and Lego blocks – 70%, dress-up materials were reported by 30% and dolls in only 19%. All teachers reported observing pretend play during designated work time. Although 78% said they would be unlikely to intervene in role play with practical life materials, only 24% maintained a housekeeping area for the specific purpose of role-play. Sixty-seven percent were unlikely to intervene in fantasy play with the farm game intended to teach functions of words, and only 35% provided puppets as sanctioned play props. Another 19% provided dolls. Ninety-three percent were unlikely to intervene in fantasy play with clay or play dough models but only 34% provided a sand table for open-ended pretend-play and only 33% provided a water table.

She concluded that teachers have mixed feelings about pretend play and the study revealed two striking trends – the length of the preschool Montessori child's day is greater than generally perceived – two to three hours longer and that a 2:1 margin of respondents felt that their respective teacher training course had inadequately prepared them to deal with children's pretend play. She also noted that Montessorians must educate themselves about current research into the value of pretend play as a medium for the higher cognitive processes to develop – problem solving, and creativity in action. Suggested inclusions were how to wash a baby, using a doll in the practical life area, dressing a doll, using blocks for construction to develop the sense of spatial relationships of objects of various sizes and as a means to apply geometric concepts relative to angles and curves.

Literacy Learning

Alofs and Gray-McKennis (1988), investigated children's writing choices if they could freely choose their topics. Using the writing process of Graves, which is philosophically attuned to the Montessori method, the authors collected and analyzed the works of students in a Montessori preschool and early elementary classrooms.

One child used the acronym, SOS, as a shorthand for the word help and repeats SOS throughout her stories. When children didn't know what they wanted to write next, or didn't feel like writing when it was expected of them, they often resorted to the comfortable repetitions of platitudes such as "I like to play stiky bear" and "its my favorite game to play and I like to play it everyday".

Gradually formula stories became more complex and began to reflect children's increasing occupation with autonomy. These stories were devoid of adults and often included dialogue between teenaged or animal protagonists to move the story forward as the characters struggled through a series of adventures or romantic episodes. For example, in a selection by an eight year old: "They went on a adventure. It was a long adventure. They almost got killed by a tiger. But they servived. Then they ate the tiger and took a nap."

The formula stories also had roots in the fictional reporting done by fours and fives. "Paul and Jane were kissing in the boat." The fictional reporting was always written in the past tense. About the same time they started doing fictional reporting the children began writing about significant events such as seeing Jesse Jackson. Even children as young as four began to add reflections to their statements about events – diary like observations.

Formal letters appeared about the same time as diaries and age seven children began to make lists for themselves – planned a funeral for the death of a classroom pet – "box, cross, bible, miniters, people, dinner, champagne, red lobster, money, cake" etc. Younger children did not make spontaneous lists but did write notes. "Today is day 10. We eat the cake." – his revision of similar messages that the teacher had written every day for 10 days during a group cooking project.

Humor was an element in all forms of the writing. About age six, it also emerged as a genre; children began writing jokes, riddles, and entertaining stories. Others constructed mazes, codes and activity sheets. Children wrote no poetry and the researchers wondered if they were including enough poetry in their classroom reading to children.

Olsen (19), studied the acquisition of written narrative discourse competence of young children learning to write before learning to read in Montessori and kindergarten classrooms. In a pilot project to compare children's oral language production with their emergent written language production, Olsen asked children to tell the story of a drawing and then to write in collaboration with the teacher. The children listened to the story *Stega Nona* and then drew a picture and orally described it.

The Montessori children responded in more complete sentences and in more elaborated clauses, orally. In analyzing spontaneous writing of children in a Montessori classroom, one child gave a non-fiction summary of marine biology lessons writing "the fish haz gilz. Fish hav latrl lines." exhibiting her use of phonetic or invented spellings for gills and lateral. Another child wrote "the old man had a hors" and still another wrote "nicole is goee to get a pet" – using the ee as the progressive morpheme when she realized there was another sound in the word *going*.

In the traditional class in responding to the story of *Stega Nona*, children used short description, some invented spelling and some syntactic development with subject verb and sometimes objects represented pictorially.

Mitchell (1994), researched Montessori children's concepts of writing. She examined what children think about writing with 23 middle-class children in a 3-6 class by interviewing them three times using four open-ended questions;

1. Can you tell me something about writing?
2. What do you think writing is for?
3. What is the difference between writing and drawing?
4. Which do you like best?

The results revealed the children often said they didn't know anything about writing or gave an answer about how writing was used. Two and three year olds, about 73.9%, knew that writing was used to give messages to others. Most third year students could articulate and demonstrate the difference between writing and drawing. Drawing was preferred to writing across all age groups although 75% of the five year old students preferred to write by the end of the year.

Phonological Awareness

Recent research has confirmed that learning to read requires explicit instruction in phonological awareness. Wilkinson(1991), compared children enrolled in three types of nursery school program: Pre-academic, Whole Child, and Montessori, to determine their level of phonological awareness and the impact of the type of preschool experience on the emergence of phonological awareness. She also investigated the influence of parental teaching of pre-reading skills at home.

Using tasks of rhyme, syllable segmentation, initial consonant, and final consonant awareness, she found the majority of children demonstrated an awareness of rhyme and the ability to segment syllables. They were better able to identify initial consonant sounds than produce the sounds themselves. Identification and production of final consonant sounds was too difficult for children of this age. Children in the Pre-Academic and Whole Child programs exhibited better performance on rhyming, but overall, the Montessori sample demonstrated a higher degree of phonological awareness skill. Montessori children were not as able to segment syllables, however, on closer examination of the data it was found that children in the Montessori group were segmenting words at the sub-syllable and phoneme level, a skill that is directly related to hearing and recording sounds in words and later being able to spell well. There were no significant differences between parent teaching practices in the home among the three types of nursery school programs.

Reading Instruction

Children who had completed their first year in a Montessori elementary classroom were studied to see what strategies they used as a reader and were interviewed about their perceptions of their reading strategies by Roantree (1992). The children read a literature/story book orally at or above their instructional level. The record of the reading was evaluated for miscues and strategies. Analysis revealed that most miscues were substitutions. Only 16% of the children self-corrected errors of the substitutions which comprised 70% of their errors; 5.5% were omissions, 3% were insertions, and 1% of the substitutions were word reversals. Of the errors, 4.5% were no attempt or no response at an unknown word. These Montessori children substituted graphophonemically related words while 56% of all errors indicated the children were operating as good readers by accessing all three cueing systems; meaning, syntax, and graphophonemic information. The interview revealed that children were aware that they could use alternative strategies such as asking for help, reading for syntax, and sounding out a word.

This descriptive study by Goudvis (1991), investigated how children collaborated with their peers to read informational texts and to complete a variety of reading-related tasks. Children worked in pairs on three different kinds of tasks and because they discussed the tasks with each other their comprehension strategies were made more explicit than is the case in other studies of comprehension which look at answers to questions about passages read.

In this study the tasks were part of the on-going curriculum in a combined third-fourth grade public school and a first through third grade classroom in a private Montessori school. Extensive videotaped observations of the children completing the tasks were scored for a variety of cognitive and social interactions. Individual and pair progress were examined by looking at scores over time with different partners. Discussions were examined to determine what types of interactions facilitated acquisition of information from texts.

The results showed that children's quality of interactions with their partners was more of an influence than their reading or mathematics ability. The findings also suggested that children can acquire much information from informational materials and can demonstrate sophisticated comprehension and monitoring behaviors if given the opportunity to collaborate with their peers. No differences between programs were cited.

Primary level teachers in grades one through three in the Dallas Public Montessori School were interviewed by Curry (1990), to determine their interpretation and methodology of teaching in the Montessori language curriculum. Some teachers did not believe that a literature-based reading approach could be incorporated into the Montessori language curriculum as children would not choose to read books that directly supported Montessori curriculum topics. A free choice library was established in one of the Montessori classes and children's choices were monitored over a twelve week period. The research found that children chose a wide variety of materials especially fantasy and adventure, stories with good endings, humor, the use of personification, and books that allowed them to solve problems. It was concluded that Montessori teachers consult Montessori's own writings on language, reading, and literature and reactivate her teacher-as-researcher stance by using children's literature rather than a basal reader.

Temporary or Invented Spelling

Alofs (1992), was interested in finding out the attitudes of teachers, administrators and parents in AMS schools toward invented spelling as it occurs in the spontaneous writing of Montessori students in the 3-6 and 6-9 classes. She surveyed 507 teachers, administrators, and parents with a 21% (112) response rate; 59% were teachers – 65% AMS, 4% St. Nicholas, and 4% AMI and another 11% unspecified. Another 11% had no formal Montessori training.

Results indicated that 90% of the respondents agreed that a knowledge of phonics is a key factor in successful spelling, that learning to spell is a gradual process developed through a variety of means including trial and error and that opportunities to test and generate spelling patterns are a necessary aspect of learning to spell. Less than 40% agreed that spelling is primarily a rote memorization process. Those with Montessori training were more inclined to agree that students should experiment with spelling patterns. Teachers with more years of experience tended to indicate that writing helped develop good spellers.

In response to questions about respondents' actual classroom practices, most teachers were accepting of invented spelling for private contexts but not when the sample of writing was to be displayed publicly for others to read. Overall, Montessorians were generally supportive of invented spelling and the developmentalist philosophy. The AMI teacher group appeared the most supportive of developmental spelling. The age of the writer appeared to be the most influential dependent variable. As the child's age increased more teachers suggested assisting the child to correct and accurate spelling. Most respondents were accepting of invented spelling because of their training but did not articulate a current research knowledge base about the developmental nature of spelling acquisition.

Peace Education

Oboodiat (1992), administered a Piagetian test to 42 five and six year-old Caucasian subjects selected from six Montessori and other private preschools. All were middle-socioeconomic class. The test revealed that the subjects were in the higher levels of the pre-operational stage. The concept of peace was evaluated by three sets of verbal-visual questions. The results indicated children's ability to practice justice while controlling their egocentrism and they had a more expanded concept of war than of negative peace.

Special Education

Hale, (1992), used classroom observation of interactions and interviews with parents and teachers to determine the manner in which children with special needs functioned and interacted within the Montessori classroom environment. Observation revealed that the Montessori model has the means to effectively include young children with special needs and that teachers responded to the children much like their peers. She also found the children were readily accepted by the other children and the classroom society fostered the development of positive, appropriate social interactive behaviors.

Teacher Training/School Accreditation

Adaptive Behavior

Unfortunately, this study by Chester (1993), provides no results that are meaningful. The research merely asked teachers to complete a rating scale of behavior, *The Vineland Adaptive Behavior Scale*, and compared children in accredited and non-accredited Montessori schools. She then compared scores on the children with the type of school they were in. While she manipulated the data and found significant relationships between accreditation and Daily Living Skills and Communication Skills domains, this information reveals nothing about differences in these schools. Merely paying fees and becoming accredited is meaningless unless the researcher also analyzed accreditation evaluation visit reports or at least observed in the six classrooms to establish some baseline of comparison. Agreeing to standards cannot be equated with full implementation of those standards. Certainly, a follow-up observation in the classrooms would have provided needed documentation that accreditation had any effects.

Teacher Beliefs and Practices

Chaney (1991), examined the degree of philosophy disparity in practice of Montessori and High Scope teachers. She compared the two models in terms of their historical and philosophical development and then evaluated them according to the standards of the National Association for the Education of Young Children. Teachers' understandings of their adopted model of early education were investigated and how they practiced these understandings and beliefs in their classrooms were also investigated. Eight teachers participated in completing questionnaires, semi-structured interviews and were observed in their classrooms. The researcher found there was a disparity between what the teachers claimed to believe and their practice in the classroom when teachers were inadequately informed about the foundations of the model, had not yet integrated the philosophy of the model with their own personal belief system, or when they were involved in a model in which they had not fully invested. Teachers seemed to be enacting practices based on their personal interpretation of the model and not the classical or critical components of the model. They tended to dismiss elements which they did not understand. The results indicated a need for a significant modification in the ways in which teachers are educated especially in selecting a teacher training program that fits their personal goals and values.

D'Emidio-Caston (1990), compared Montessori and public school kindergarten and primary teachers' instructional values and the influence of their values on teaching practices. Fifty Montessori teachers and twenty-six public school primary teachers were surveyed using two values inventories. These were followed by observations and interviews of three Montessori teachers representing different Montessori training and organization affiliations and five public school teachers. All were teaching children in higher socioeconomic areas. The data reveal no significant difference in the humanistic values advocated between the two groups but the Montessori teachers were significantly higher in their advocacy of the instructional values and differed in educational goals and outcomes. While both groups were similar in the use of manipulatives and in their belief that children are eager observers, the groups differed significantly in their understanding of sensitive learning periods, preparation of educational environments with self-correcting materials, the use of observation to determine next lessons, and individual vs. group lessons and student choice of activities. Montessori teachers expressed beliefs in the capability of children to make decisions, to be autonomous, responsible, and capable of self-initiated learning. The public school teachers worked more often with whole groups using open-ended tasks to accommodate individual abilities of students. Public school teachers felt less autonomous citing principals, district mandated testing, and increased academic emphasis as inhibiting change.

Jun (1994), surveyed 261 of the possible 3,642 Korean Montessori teachers and 375 Korean parents from 32 Korean Montessori schools located in the major cities of Korea. The findings demonstrated that 74.5% of the teachers attended the training to increase their professional competency and their knowledge of child development. The teachers' levels of satisfaction differed significantly based on age and experience in teaching. Parents send their children to a Montessori school because they believed the learning environment nurtured their child's interpersonal growth. The majority of parents were very satisfied with the Montessori experience and none were dissatisfied or very dissatisfied. Parents indicated highest levels of satisfaction in the areas of concentration and academic achievement. The majority of Montessori teachers encouraged the implementation of the Montessori Teacher Training program in neighboring countries.

Teachers' Language

Ege (1992), found differences in the ways teachers used language to organize student learning environments and to mediate learning. The language of the teachers seemed to reflect the training philosophy although the larger context of the school setting influenced the ways teachers functioned.

Classroom management and the role of the adult in relation to the learner were studied by Matias(1990). He wanted to explore and describe the kinds and functions of directive language in the process of getting things accomplished in a Puerto Rican Montessori preschool classroom. He studied the classroom for one school year using three intensive videotaping phases, at the beginning, middle and end of the academic year. Specifically, he wanted to study three classroom events; the entrance / transition to work, individual work time, and circle time. Micro analysis of the six videotapes and nine formal and twenty-four informal teacher interviews revealed that teacher directives were sent to individual children and allowed them choices at entrance / transition to work but as the year progressed this event became more academically oriented and fewer choices were allowed the students as well as less opportunity to direct each other. During the individual work time the teacher's directive pattern was individual and pupils sought more information from the teacher. Gradually the teacher had to remind the children less about the rules as they internalized their pupil roles. Students' directives to each other mainly asked for help or expressed social and academic needs. Of the three events, circle time was the most teacher-directed activity and students were expected to comply faster here than in the other two events. There were marked differences in how the teacher gave directives to boys and girls and to children who were new entrants to Montessori from other types of school experience. In all, the teacher voiced twenty-one social rules.

Emerson (1993), hypothesized that children who received the traditional presentation of the pink tower supplemented by thought-provoking discussion would choose to spend more time with that activity than children who received only a traditional presentation of the pink tower and would score higher on a test of seriation. He used a three group paradigm: traditional, supplemented by limited discussion, and supplemented by frequent thought-provoking questions. He found that children receiving supplemental discussion did not score significantly higher on tests of seriation. All children increased in points gained on the test with the group receiving extended discussion gaining the most but still not significantly more. The latter group also spent more minutes with the pink tower than the other groups. In fact children who received the standard presentation spent less time with the material. The thought-provoking questions seemed to generate greater interest in the material. Emerson believes this is because the discussions restored the interplay between action and thought.

Teacher Knowledge and Attitudes

Zener (1994), investigated the degree of agreement between Association Montessori Internationale (AMI) trained teachers' knowledge and attitudes and Montessori's recommendations for guiding the process of normalization among young children and the reasons for differences from those recommendations.

One hundred sixty-five teachers were surveyed with knowledge and attitude scales followed by semi-structured interviews with 10% of the participants.

The study concluded that AMI trained Montessori teachers reflected a satisfactory degree of agreement with the recommended knowledge and attitudes. Reasons for differences among the teachers about guiding the process included using other aspects of Montessori theory, disagreement with the Montessori theory, difficulty in carrying out the theory in practice, misinterpretations of the questionnaire items, and misunderstandings about Montessori's recommendations for guiding the process of normalization.

Implications of the study included validation of teachers for the high level of consistency in their reflections and the development of a more complete theoretical understanding of the process of normalization, particularly the importance of respecting children's spans of concentration. Zener observed that teachers often interrupted children thus disrupting the child's concentration.

Reading Instruction Beliefs

Using DeFord's *Theoretical Orientation to Reading Profile*, Dold (1994), examined the theoretical orientations to reading of Montessori teachers and paraprofessionals. The study also investigated if there were differences in responses among subjects trained by three separate organizations. The results revealed that the majority of subjects held a skills theoretical orientation to reading rather than a phonics or whole language approach. Most responded in manners consistent with Montessori philosophy. There were some items in which subjects trained by two of the organizations significantly differed.

Technology

This study by Curran (1985), is a critical analysis of institutional resistance to the Montessori method in the early part of the twentieth century. Interestingly, the research posits the idea that Montessori educational theory was rejected because the didactic materials were a new technology that threatened to weaken the power, prestige, and economic positions of teachers and administrators as the materials would replace the teacher centered classroom with a completely different organization pattern for classrooms and schools.

Television

Age Appropriate Television and Affects on Classroom Behaviors

Aidman (1993), used the Soviet activity

theory to determine what preschoolers knew about appropriate host-guest behaviors and polite behavior routines. The *Mr. Rogers' Neighborhood* show was used in the study but the researcher also interviewed the program's producers, and surveyed and interviewed parents to establish family attitudes and methods for teaching.

Aidman concluded that preschoolers have quite a bit of knowledge about how to interact as hosts and guests and that they do imitate and learn from television programs. Their memory and comprehension for televised messages increased with age. The youngest children, however, demonstrated difficulty in exhibiting appropriate behaviors because of fear related to strange situations. In this study, the program, the school, and the home all demonstrated middle-class American values and although the television programming was important, she concluded that children's abilities in this domain are stretched more by interacting with an adult, and that the learning through role playing in the child's "zone of proximal development" was more powerful than passive viewing.

Summary

John Chattin-McNichols, when asked about the state of the art of Montessori research, "The problem is that Montessorians don't know about research and researchers don't know about Montessori education." He also added, that "not only has important research not been done … Montessorians have difficulty in talking about what should be studied." It would appear from our most recent review that John was correct in his assessment but since he made these statements in 1990 there seems to be much more interest in Montessori research. The wide variety of topics being studied attest to that.

What is heartening to see are the number of studies that now use ethnographic methods of actually being in Montessori classrooms and attempting to evaluate changes in children through first hand observation of the process of education. Many studies annotated in this paper demonstrate that there are ways to observe the Montessori classrooms, children and teachers, and to describe differences in Montessori classrooms from traditional classrooms.

The studies on autonomy and peace, for example get to the very basis of Montessori education – the values children acquire. Parents in Korea recognized the difference and chose Montessori for their children on the basis of the interpersonal education – not on the basis the children achieve more academically. In that study the author states that over 3,000 Korean teachers have been trained in 10 years! Not all of these teachers are implementing Montessori and some never intended to do so, but rather, they took the training to learn more about children and their development. There is an important message in that study that we all might hear.

Reviewing this vast array of research makes me hopeful that scholars will continue to be interested in what makes Montessori so different or so special and make them wonder how do the Montessori teachers get children to be so cooperative and interested in learning? It is difficult to develop an instrument to measure respect but visitors to Montessori classrooms notice it immediately. Seeing the respect of the adult for the child and the child for others, visitors know they are seeing a revolution in progress. What would happen if all the children in all the world grew to be adults respectful of all life they wonder? What would happen? ❖

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Children At Risk

Sylvia O. Richardson, M.D.

The current American educational and child care scene is under attack from many quarters. America is coming to grips with the need for a more literate society and with the realization that liberty can only be achieved through literacy. Almost one-third of our children will join the ranks of the illiterate unless they are provided with instruction that meets their needs. Many of these youngsters will be dyslexic or have learning disabilities. Others will not – but they will need appropriate instruction.

This paper will first discuss the major characteristics of learning disabilities and then describe Dr. Montessori's approach to education. Hopefully, the reader will grasp the significance of the Montessori principles and practices as they may be applied in the education of children with learning disabilities.

Learning Disabilities

All children with learning problems do not necessarily have specific learning disabilities. Diagnostic terminology in this field can be extremely confusing. A number of terms are used freely by educators, the lay public, as well as the medical profession.

In 1988 the National Joint Committee on Learning Disabilities (NJCLD), a national committee representing ten organizations concerned with individuals with learning disabilities provided what may be the best of several current definitions which has also had wide acceptance among professionals: "Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction, and may occur across the lifespan.

"Problems in self-regulatory behaviors, social perception, and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability.

"Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, serious emotional disturbance) or with extrinsic influences, (such as cultural differences, insufficient or inappropriate instruction), they are not the result of those conditions or influences." (NJCLD, 1988)

Children with specific learning disabilities are of at least average intelligence. Boys outnumber girls by approximately four to one, which happens to be the approximate ratio of boys to girls in relation to language disorders and stuttering. There is usually a family history of learning disabilities, especially among the dyslexic population. These children demonstrate disorders of varying degree in one or more of four areas: coordination, language, attention, and perception.

Disorders of Gross and/or Fine Motor Coordination

The child with learning disabilities may be quite clumsy. Although not a cause of learning disabilities, clumsiness is frequently an associated symptom that can be devastating for a child. This is the youngster who bumps into everything, spills the milk, trips over a thread in the carpet. Of course, there are many clumsy adults who have never had any learning problems, and clumsiness may not be a major concern from the adult point of view. Clumsy children who have difficulty hopping, skipping, running, riding a bike or playing ball, however, probably don't feel very good about themselves. They are rarely chosen to be on anyone's team and they get in trouble at home because they break things. They easily develop a low self-image, in itself an impediment to learning.

Children with poor fine motor coordination are unable to coordinate the small muscle groups, particularly in their hands. They may have difficulty in dressing and undressing, learning to button, tie, and zip. In school they will have difficulty using a crayon, scissors, and a pencil. Children with fine-motor incoordination become dependent upon others to cut up their food, to help them dress, etc. This is indeed a handicap, since one of the major requisites for school success is the degree of independence that allows children to assume the responsibility for their own learning.

Gross and/or fine-motor incoordination is not the crux or the cause of any specific learning disability, but may nonetheless prevent children from meeting the normal demands of the school situation in all aspects – academic, social, and emotional.

Disorders of Language

The language problems of children with specific learning disabilities may be extremely complex. Because they are not visible, unlike problems in coordination or behavior, they are less likely to be discovered or diagnosed. We are not discussing speech problems alone. Speech, like writing, is the motor act of self-expression. Language and thought are related processes, and the term "language" includes both spoken and written language. In order to acquire competence in reading we must build on proficiencies made available in the primary (spoken) language system.

The majority of individuals with learning disabilities have specific difficulty in reading, writing and spelling. Reading researchers have reached consensus that most of these disabilities may originate with any of the several components of language, especially those that affect reading: **phonemic awareness,** the awareness that words are made up of individual sounds; **phonology**, the sound structure of our language which includes syllables as well as phonemes; **syntax**, the rules which govern the sequential ordering of words, phrases, and sentences; **semantics**, the meaning system that is attached to words and phrases as a result of experience in many contexts; and adequate **short- and long-term memory capacities**. Many youngsters with learning disabilities have considerable difficulty bridging from speech to print, the task of establishing sound/symbol correspondence in beginning reading – a task that draws on their phonological awareness and memory and also is dependent on the discovery that words are made up of smaller units.

Delay in the acquisition and use of spoken language may be the sole forerunner of a learning disability. Most children with reading and writing problems will have had a history of late or impaired speech and/or language development. These limitations make it difficult for them to learn, in or out of school.

Children with learning disabilities may not have much trouble with articulation, although they may have what Katrina de Hirsch and others call "cluttered" speech, speech that sort of falls on top of itself. Speech therapy is helpful for such youngsters but other language problems are usually involved as well.

It is important to note that children, upon school entrance, do not all possess equal levels of competencies in the critical language areas. Since success in beginning reading, and consequently in beginning school, depends upon the adequate development of their functions of spoken language, early school experiences should be directed toward language development as well as reading instruction.

Disorder of Attention

Disorders of the functions of attention include short attention span, distractibility, impulsivity, hyperkinetic behavior or activity decontrol, and disinhibition. The label given to many children who demonstrate such behaviors is Attention Deficit with Hyperactivity Disorder (ADHD). However, it is important to remember that hyperactivity is not a disease; it is an adjective. Many children called hyperactive are attentive when their activities are of interest to them or when they are doing things that they can do. We must distinguish between the child whose hyperactivity is neurologically based and the child who is "hyper-reacting" to stress.

Some children have attentional problems due to receptive language disorder or to a memory deficit. Some "hyperactive" youngsters simply have high intensity temperamental attributes (Thomas & Chess, 1977). The importance of attention in learning cannot be overestimated. Attention means close or careful observing or listening. The child with a disorder of attention has difficulty in attending ***selectively*** to pertinent stimuli. Later discussion will address the ways in which attention can be trained.

Disorders in the Function of Perception

A perceptual disorder is a defect in the way our mind interprets what we see or hear or take in through our other senses. Children with normal vision and hearing acuity may misinterpret or misperceive what they see or hear. The functions of perception can be related to the visual, auditory, tactile, kinesthetic, or other senses. Visual perception is often tied to movement and space while auditory perception refers to that which is temporal and sequential.

Some children may have a visual-motor mismatch. In trying to copy letters or shapes, they are unable to guide finger movements accurately according to what they see, and so drawing and writing are impaired.

Visuospatial perception is closely tied to children's growing organization of their physical environment, which is based on the vantage point of their own beings, whether objects are far from them or near, larger than they or smaller. There may be confusion about direction – up and down, right and left, front and back. Children with learning disabilities may have difficulty tying objects into a unified whole; their possessions may be scattered in complete disarray. Lack of organization is a major problem. They may demonstrate persistent reversals or erroneous sequencing of letters and words when reading, spelling, or writing. They may also mix up their words, like Sheridan's Mrs. Malaprop.

A great deal of learning is dependent upon early sensorimotor integration and perceptual maturation. Children learn first through their own movements and manipulations, all of which then become associated with the sensory information that they receive and perceive. Sensorimotor development occurs primarily in the child's first two or three years of life, but later academic learning is dependent upon the development and integration of these skills. Piaget (1952) wrote: "Sensorimotor intelligence lies at the source of thought, and continues to affect it throughout life through perceptions and practical sets… The role of perception in the most highly developed thought cannot be neglected…"(p. 326).

The child's coordination, language, attention, and perception are all interrelated. No learning disabled child is exactly like another. There is no single symptom; the symptoms occur in clusters and vary from child to child. The importance of any particular problem within the symptom complex can change as the child proceeds through school. Learning disabilities change over time and have lifelong effects.

To summarize briefly the four major disorders demonstrated by children with learning disability are disorders of fine and gross motor coordination, language, attention, and perception. These are not isolated but interdependent functions. They are present from birth through the lifespan of the individual in changing order of importance and in varying degree.

Special education principles and practices address these problems after a child has been identified in school, but I believe that intervention in the school age years is too little and too late. Much can be done in early childhood education programs to prevent or ameliorate the anguish suffered by the children before assistance is provided in school. I believe that Montessori offers one answer for these children.

The Montessori Method

It would be presumptuous of me to describe Dr. Montessori's work or methods to you. As you know, there have been many modifications and adaptations of Montessori in America to accommodate cultural differences and change. The basic philosophy and principles of instruction however, generally remain constant. It is the purpose of this presentation to point out how Montessori principles and practices pertain to the education of the high risk child.

Montessori's method is largely based on a concept described by Seguin (1907): "To lead the child, as it were, by the hand, from the education of the muscular system, to that of the nervous system, and of the senses, ...and then from the education of the senses to general notions, from general notions to abstract thought, from abstract thought to morality."(p. 144). In *Dr. Montessori's Own Handbook* (1965), she states: " The technique of my method, as it follows the natural physiological and psychological development of the child, may be divided into three parts:

1) Motor education;
2) Sensory education; and
3) Language or intellectual education.

The care and management of the environment itself afford the principle means of motor education, while sensory education and education of language are provided for by my didactic material" (pp. 49-50).

The Prepared Environment and Exercises in Practical Life

Montessori believed that the child's environment should be "prepared" and maintained by the teacher. She saw the teacher as the caretaker of the environment and as the child's guide.

Montessori designed the furniture in the first *Casa dei Bambini* (Children's House), to be light, child-sized, and easy for the children to move, or arrange, or wash with soap and water. She believed that education should have as its object the development of independence in the child, and frequently stated that every unnecessary aid to a child is an impediment. Thus, the "prepared environment" includes the opportunity for movement and motor training and, of major importance, the provision for order. Children are to be guided from the start by presenting them with activities that they are prepared to do, at which they can be successful, and that thereby capture their attention. The concept of order is enormously important in the education of children with learning disabilities.

The "prepared environment" contains objects designed through their use to achieve a definite purpose, to allow the child to carry out a real piece of work having a practical objective. Each activity in these "exercises in practical life" is made up of a graded series of movements to be performed in logical sequence. Montessori broke down each exercise into "points of interest," specific points within each exercise to which the child's attention is drawn. As the children are taught each "exercise," such as washing hands, polishing shoes, or cutting vegetables, each step of the operation is presented by the teacher verbally and by demonstration in logical, orderly sequence. The children learn to focus their attention and to analyze their body movements as they repeat the sequence each time. As the children's attention is directed to proprioceptive and external cues, they are learning to recognize and to use feedback. All of this helps the children to develop efficient motor patterns as well as selective attention.

The exercises in practical life may well be the most important aids for children with learning disabilities. Exercises such as pouring rice or liquids, carrying various apparatus, cutting, working with the dressing frames, all assist the children to develop good gross and fine motor coordination. Exercises in care of the environment such as washing hands, tables, or linen; tidying and cleaning up the room provide structure and help the children to learn order. Exercises in grace and courtesy teach social behavior, while walking the line is a marvelous lesson in coordination as well as attention. The Silence Game, usually a favorite with the children, provides wonderful training in listening as well as body control.

The Soviet research psychologists, Zaporozhets and Elkonin (1971), found that to teach children how to carry out a complex task, one must make sure that they are also taught how to organize their orienting responses (attention). They must learn what to look at; their action must be directed to the right cues, both external and proprioceptive. Thus, they must learn to make use of feedback from the external situation and from their own action, and the teacher must help them to do this. Several experiments have shown that a task can be learned more rapidly if orienting behavior (attention) is specifically trained through motor mediation. The Montessori exercises in practical life involve both verbal and motor mediation and are invaluable aids in helping the child to attend and to coordinate their movements.

The importance of the exercises in practical life cannot be overemphasized in working with learning disabled children. It is through these exercises that they can ***develop self-respect and some independence***. The self-assurance that comes with the knowledge that they can care for themselves and their environment will help them to withstand the many difficulties they will encounter later in their academic struggles.

Sensory Education

Montessori provided much material for sensorimotor training. The sensorial materials are designed to attract children's attention, to "educate the senses," and to allow manipulation by the children. The goal is to assist the children in their task of creating order and sequence in sensory input by presenting a carefully constructed sequence of experiences which proceed very slowly from the concrete to the abstract.

When one "educates" the senses, one is not trying to make the children see or hear or touch better, but is helping them to know what it is that they see or hear or touch. By providing strongly contrasted sensations, followed later by various graded series of sensation, one teaches the children to discriminate. For example, if we teach them first red and then blue, then several shades of blue or several shades of red, we are teaching what is red and what is blue. At the same time they are learning to contrast, to compare and match, to discriminate, to distinguish different sense impressions and to put them in some sort of order. This is the beginning of a conscious awareness of the environment as opposed to any unconscious knowledge they already may have.

The idea of always presenting two contrasting stimuli rather than a single one was derived, as were many of Montessori's activities, from Seguin. "We must never confine to automatic memory what can be learned by comparison, nor teach a thing without its natural correlations and generalizations; otherwise we give a false or incomplete idea, or none, but a dry notion with a name..."(1907, p. 66). Seguin also developed the *Three Period Lesson* to associate an object or a quality with its name. The first period consists of establishing identity, associating the sense perception or the object with its name. The second period tests the child's recognition of the object corresponding to the name. The third period establishes that the child can recall the name corresponding to the object. During these lessons the teacher may work on correct articulation, and a good bit of repetition of the first two periods may be necessary before recall is accomplished. The interval between success in the second and in the third period (i.e., between recognition and recall) may be quite lengthy and provides a striking illustration of the amount of time and repetition required for a child to establish the associations so necessary in language development and learning (Richardson, 1969). Current education practice of telling and testing is absurd, even for children without learning disabilities.

Language

Montessori effectively links language development with sensorimotor education, one facilitating the other. She did not devise a method for teaching reading. In fact, in her handbook, the table of contents does not mention reading; there is one section on the material for the preparation for writing and another on exercises for writing "alphabetical signs."

Written language is viewed as an extension of oral language: "To train the child's attention to follow sounds and noises which are produced in the environment, to recognize them and to discriminate between them, is to prepare his attention to follow more accurately the sounds of articulate language" (1965, p. 123). Such attention (listening) aids the child in his development of phonemic awareness. Variations in the Silence Game can be very effective for this.

Children are taught the precise ***nomenclature*** for the sensorial materials, the names of the objects and words describing the specific attributes. For children with language learning disabilities this is imperative, because we know that one of the factors most characteristic is a deficit in naming. Seguin's *Three Period Lesson* is used for nomenclature. The children learn the language of forms and dimensions. They learn gradations of quality and contrasts. For example, colors are graded according to tint and to richness of tone, silence is distinct from non-silence, noises from sounds, and everything has its own exact and appropriate name.

Montessori stated: "The didactic material, in fact, does not offer to the child the 'content' of the mind, but the ***order*** for that content. It causes him to distinguish identities from differences, extreme differences from fine gradations, and to classify, under conceptions of quality and of quantity, the most varying sensations appertaining to surfaces, colors, dimensions, forms and sounds. The mind has formed itself by a special exercise of attention, observing, comparing and classifying" (1965, p. 136). Such vocabulary building, with precision, is part of the preparation for reading and writing. "Language comes to fix by means of exact words the ideas which the mind has acquired. These words are few in number and have reference, not to separate objects, but rather to the order of the ideas which have been formed in the mind" (p. 137).

As stated, the underlying neuro-psychological deficit in dyslexia is a problem in phonemic segmentation or phonemic awareness skills. Thus, one can appreciate the significance of Montessori's early language exercises. The analysis of sounds relative to speech are essentially auditory-visual-tactile-kinesthetic exercises connected with the learning of the alphabet. Sandpaper letters are provided for the children to look at and trace with their fingers as they voice the sound of the letter, thus utilizing a multisensory approach. Later they will use a movable alphabet to build words; these are letters which the children can hold in their hands and manipulate themselves.

The multisensory approach to writing and reading was not new. Various forms of this date back to Plato (427-347 B.C.), who taught boys to write by tracing; Horace (65 B.C.), who taught children by means of pieces of pastry made in the shape of letters; and Quintillian (A.D. 35-100), who suggested learning the form and the sound of letters simultaneously (Richardson, 1989).

Montessori viewed graphic, or written, language as offering to the child an essential tool for communication with others as well as a means of perfecting spoken language. This reciprocal function of speaking and writing is an essential point that is overlooked in education and has surfaced only recently in language research.

Montessori saw that the indirect preparation for written language would include all of the child's previous experience: the exercises in practical life, which begin to prepare the hand for writing and which help to establish control of movement and eye-hand coordination; and the sensorial materials, which develop the child's perceptual abilities, visual and auditory discrimination, ability to compare and classify, all of which are necessary for written language. Through practice, the hand learns to control the pencil with the metal insets, and the sandpaper letters provide the kinesthetic sense with the memory for forms pertinent to written language. At the same time, sounding out the letters reinforces oral kinesthetic memory, increases auditory discrimination and auditory memory, and assists the child in the final perfection of speech itself.

Liberman (1971) pointed out quite clearly that if readers and writers are to use the alphabetic principle productively they must be aware of the phonological structure the letters represent. Liberman also hypothesizes that the weakness in phonemic awareness displayed by children who have difficulty learning to read may reflect, "a more general deficiency in the biological specialization that processes phonological structure in speech"(1989). Difficulty in, or a lack of, phonemic awareness is a cardinal sign of dyslexia, or specific language disability. Liberman (1989) also points out that phonemic awareness can be taught. This can be seen in Montessori preschools where children are aided by the sensorial and language materials in their development of attention, phonemic awareness, phonological processing and subsequent reading achievement (Lillard, 1973).

There are some simple measures of phonemic awareness:

a) Phoneme counting, such as "how many sounds are in *box*";
b) Phoneme identification, such as "what is the last sound in *dog*?";
c) Matching, as in rhymes;
d) Reversal, e.g., "say *cat* backwards"; and
e) Deletion, e.g. "say *smack* without the *m*."

Bradley and Bryant (1983) found high correlations between preschoolers' phonemic awareness in response to writing tasks and their later reading and spelling achievement. Those children who were trained in the phonological classification of words and in phoneme-grapheme correspondence were superior later in reading and spelling to children who did not have this training.

When children work with the sandpaper letters, they are exploring the sounds of language and the shapes of the symbols for these sounds; this is neither an exercise in writing nor an exercise in reading.

Through their increasing ability to analyze spoken words into component sounds, and through their mastery of the association between sound and written symbol, children are led into the process of building words. The Moveable Alphabet enables the child to build words but, again, this material is not used to encourage reading or writing but simply the mechanical production of the children's words and later their phrases and sentences as well. Montessori says, "Touching the letters and looking at them at the same time, fixes the image more quickly through the cooperation of the senses. Later, the two facts separate: looking becomes reading; touching becomes writing. According to the type of individual, some learn to read first, others to write" (1912, p. 325). Thus, when the children place the cardboard letters in the sequential order in which they hear them in the spoken word, they can build a visual image of the written word for themselves. Then the children are led to analyze the written word into its component parts, to articulate them, and to blend them together to form the spoken word – the process of mechanical reading. Children who can compose a word with the letters of the Moveable Alphabet are not writing, but are ready to write – they are prepared.

To summarize, the basic steps in teaching the child to write are:

1) indirect preparation of the muscular mechanism for holding and using the pencil;
2) use of the sandpaper letters to establish the visual-motor image of the graphic symbols and to establish the kinesthetic memory of the movements necessary to writing, associating these with the sounds of the letters; and
3) use of the Moveable Alphabet to compose words that are first "sounded out" by the child.

Montessori found that "in general, all children of four are intensely interested in writing" and that "writing is one of the easiest and most delightful conquests made by the child." (1912, pp. 293-294).

We have discussed briefly the development of writing and mechanical reading, or decoding. In order for the child to read with comprehension, however, further work of a different nature is required. " I do not consider as reading the test which the child makes when he verifies the word he has written. He is translating signs into sounds, as he first translated sounds into signs... What I understand by reading is the ***interpretation*** of an idea from the written signs... So, until the child reads a transmission of ideas from the written word, he does not read" (1912, p. 296).

When the child can read back the words he has made with the Moveable Alphabet, the teacher introduces the Phonetic Object game. A box is presented which contains small objects, each with a C-V-C combination, such as pin, cup, cat. The teacher writes one of the words on a slip of paper and asks, "Can you give me the one I want?' If so, the child can then take off, matching objects and labels. Most Montessori classrooms have an enormous number of these object games available, and the children love decoding the labels and placing them with the correct objects.

Next, phonogram cards and "puzzle words" (non-phonetic) are introduced and, later, the roots of words are explored. Usually the children are between six and nine years of age when they become interested in the source of words, although this isn't true of children with learning disabilities.

Gradually, the children begin to explore the functions of words. This is the first time that Montessori uses the term, "introduction to reading." She states; "Before the child can understand and enjoy a book, the *logical language* must be established in him. Between knowing how to read the *words*, and how to read the *sense* of a book there lies the same distance that exists between knowing how to pronounce a word and how to make a speech" (1912, p. 304).

The many grammar games first introduce "naming words" (nouns) and their modifiers (articles, adjectives, and prepositions); and then the dynamic "doing words" – verbs with their modifiers (adverbs and prepositions). Finally, the children explore sentence analysis and composition. They learn the names of parts of speech, their functions, and relative place in the sentence.

Dr. Montessori believed that elementary school should begin with "children who possess, besides a perfect mastery of articulate language, the ability to read written language in an elementary way, and who begin to enter upon the conquest of logical language" (1912, p. 308). She was too wise to specify an age. However, children with learning disabilities move very slowly through the language exercises. In fact, it is usually necessary for the teacher to lead such children by the hand into these areas when they are reluctant or resistant. The Montessori teacher should know the developmental stages of reading and how to extend or modify teaching as needed.

Children with specific language learning disability can profit from this carefully programmed sequence of learning experiences, from the concrete exercises in practical life to the final abstraction of interpretive reading and writing. A multisensory approach is a requisite in the instructional approaches for children with language learning disabilities or differences.

There are many excellent multi-sensory remedial programs for children with dyslexia, most of which are offshoots of the Orton-Gillingham Approach (Richardson, 1989). June L. Orton (1957) has summarized these approaches in two basic principles:

(1) Start the language training with small units that the pupils can handle easily and then proceed by orderly steps from the simple to the more complex. Be sure to teach the blending of the separate units into syllables and words for recognition in reading and recall in writing.

(2) Use an "integrated, total language approach. Each unit and sequence is established through hearing, seeing and writing it"(p. 6). The various patterns reinforce individual differences among the students.

The similarity between these remedial approaches and that of Montessori are clear. Why then have we not initiated such preschool programs for children at-risk academically, programs which can continue through the primary grades, or longer if necessary.

Not all children who have difficulty learning in the primary grades have learning disabilities. Many are overplaced, "unripe" youngsters who need more time for sensorimotor development. When the school system insists on force-feeding them, they will soon look and act like they are learning disabled. It is, I think, a form of child abuse to allow children to fail the first grades of school before we find a label that will allow them to receive "special" education. We must not continue to punish children who can't learn what we want them to learn, in the way we teach them, and in the time we give them.

To recapitulate: Montessori's approach to early childhood education is developmental; it utilizes techniques and materials that would assist the intelligent child who demonstrates deviant development of coordination, language, attention, and perception; the child who is at risk academically. The sensorimotor foundations of language development are built in an orderly, logical fashion. Training is provided in the motor bases of behavior and learning such as posture and coordination, the development of directionality and laterality, and the development of body image. There is training in perceptual skills such as form perception, space discrimination, stereognosis (the ability to identify objects by touch or feel), and recognition of texture, size and structure. The child receives training in auditory perception (listening), in visual perception (looking), and in kinesthetic perception (muscular memory of movement, positions, and postures). These provisions assist the child to develop the prelinguistic and preliteracy skills that are among the requisites for the development of symbolic language, spoken and written.

Montessori demanded humility and careful clinical observation on the part of the teacher. She had deep respect, a reverence, for the child and his work. So must we all. Children with dyslexia and other learning differences are only handicapped by us – by a system which fails to provide them with access to an appropriate education that meets their learning needs. ◆

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The Child in the Family

Chulanganee Fernando

It's a miracle! The birth of a child. A father, so overwhelmed at the sight of his newborn son, said: "Call Heaven. Tell them an angel is missing!"

Dr. Montessori says: "In the course of its psychological development the baby achieves things so marvelous as to be miraculous, and it is only habit that makes us indifferent spectators."(*Secret of Childhood*, p. 35)

We adults must develop and maintain our faith in the child, and our faith in the great mystery of life manifested in the child. Faith can create miracles. We must realize there is an energy, a divine power, which follows a special pattern which leads to the formation of the human being.

"The source of growth lies within (the child). A child does not grow because he is fed, because he breathes, because he lives in suitable climatic conditions. He grows because his potentialities for life are actualized, because the fertile seed from which life comes is developing according to its natural destiny."(*Discovery of the Child*)

Margaret Stephenson says: "The art of Montessori is, functioning the best way to help the child help himself, an art that joins home and school. Parents and teachers supporting one another."

Hillary Clinton says: "It Takes a Village" to raise a child.

Dr. Michael Obsatz says: "It takes a village and a family to raise a child."

Mary Pipher says: "Family need not be traditional or biological. But what family offers is not easily replicated. Let me share a Sioux word, "tiospaye", which means the people with whom one lives .... The tiospaye gives children multiple parents, aunts, uncles and grandparents. It offers children a corrective factor for problems in their nuclear families."(*The Shelter of Each Other*, p. 23)

Dr. Montessori says: "Fathers and mothers must shoulder their responsibilities; and if the home fails for lack of means, then it is required of society not only to give the needed instruction, but also the support necessary for bringing up children.... if society recognizes as necessary to the child's development things that the family cannot provide, then it is society's duty to provide these things."(*Absorbent Mind*, p. 12)

Education as a help to life considers the needs of a living organism, and realizes the child herself has her own spiritual program. When we change our attitude towards the child, we change our attitude towards all of life. This is the first step we must take; Montessori calls it "the modification of the adult." The conscious mind has no access to the functioning of the unconscious. But if we have the desire to know what is best for the child, through sincere desire we make the reality. Desire is pure potential seeking manifestation. Inherent in desires are all the mechanics for its fulfillment, just like in the seed is inherent the entire mechanics of a tree. (Deepak Chopra, *Ageless Body, Timeless Mind*)

The task of the educator (and all adults are educators, including parents and teachers) is to help the child live his own life of development according to the laws which govern it, in an environment prepared for this purpose.

The home is the first prepared environment for the child. There is an atmosphere of hope, optimism and love. It provides security, and the child learns to trust his parents and the world into which he is born.

As he grows, the child manifests his love of the environment by taking good care of it. The child's spiritual well-being is linked to taking good care of his environment (Joen Bettmann). The world is full of wonder for the child, and we make it a wonderful place for him to live.

St. Thomas Aquinas: "Wonder is a kind of desire in knowing. It's the cause of delight, because it carries with it the hope of discovery."

Sofia Cavalletti says: "It is the educator's task to offer the child's wonder an object capable of taking the child always further and deeper into the awareness of reality, an object where frontiers are always expanding, as the child slowly proceeds in the contemplation of it."(*The Religious Potential of the Child*)

Humans become animated when they are in love with their environment. This love for their environment can be realized when the inner nature of the child has freedom to explore the beauty of the world around him. We must respect the rhythm of the child and not rush him from one thing to another. Montessori talks about a Japanese father taking his little son for a walk, how he would stop and wait while the little one took time to examine the minute insects and plants on the sidewalk.

As the child's inner urges for exploration are satisfied, there develops an irresistible urge in humans to create. Dr. Montessori refers to "supranature", which is the environment created by humans over and above the natural environment. Humans utilize the laws of nature for their own advantage. The nature of the inner man is synchronized and harmonized with nature outside man. When this occurs, it is truly a spiritual manifestation.

We must believe in the child, that she is capable of real goodness, intelligence and purity. We will stand in awe and wonder at the miracle of nature – inspired by the child's natural development when she is allowed to proceed according to nature's plan.

At birth the child is a spiritual embryo, the physical embryo having been constructed before birth. Just as nature has a clear cut plan for the physical embryo, there is a definite plan the spiritual embryo must follow in order to become a human being.

The child is not born with a little bit

of intelligence, a little bit of will and memory, and reasoning. All these psychic organs have to be constructed during the embryonic period, from birth to three years. Only humans have two embryonic periods. Other animals are born complete with all their instincts in place. That is why they can move around and communicate soon after they are born. But humans have to construct their minds and their behavior after birth.

This is why the environment is so important. The child needs a human environment that will provide the psychic nourishment and the raw material for his psychic construction.

Renilde Montessori says: "The greatest discovery that Dr. Montessori made was the intrinsic humanity of children, their transcendent goodness. Children have the better qualities distinctive of humans. We believe all children are born good. Like all living things children come into the world powerfully tending towards wholesome growth."

All babies are born good. They can know it only by the way they are treated. Instead of looking at the infant as small, weak, and slow, we must recognize the power that lies hidden within.

Dr. Montessori was concerned about what kind of society we are providing for our children, and what kind of a society they will create in the future – in the 21st century.

Douglas Heath says: "Teachers (parents) also agree quite well about the five most important strengths that students (children) will need in their rapidly changing, technology dominated, interdependent, less coherent communities of the future.

"They agree responsibility should head the list. Communication and problem solving skills come next, followed by interpersonal attitudes such as respect of different peoples and skills, such as cooperatively working with others; ethical values such as honesty and a self-concept, as a member of a global community."(*Schools of Hope*).

Social values vary greatly from culture to culture. In a totalitarian, socialistic state, the individual works for the benefit of the state, and sometimes the individual is given little or no value. Western societies lean more towards self-gratification and the rights of the individual. In ancient Greece, their highest social rule was to invite any stranger into one's home, who is in need of food and shelter. One had to fulfill the obligations of a host, bathing, feeding, clothing, before even asking his name and whereabouts.

In Japan, family loyalty demands sacrifices of individual family members. Many societies have rules regarding marrying outside that society. In India marriages are arranged in early childhood.

It is our responsibility to ensure and provide the most highly valued experiences for the child. We must introduce the highest social values, such as love, respect and gratitude to the child at a very early age. If we live these values in the child's environment, the child can absorb these real life experiences.

Douglas Heath says: "Teachers and parents agree about the meaning of human excellence whether in Minneapolis, Hong Kong, or Cairo, they identify the same type of gifts that they wish their students or children might some day thank them for: self-confidence, joy of learning, sense of what is right, ability to teach themselves, curiosity, sensitivity to others and compassion. When describing the most mature, fullest, all-round effective adult that they know – the ideal person they wish they or their children were like – they invariably identify similar strengths. Heading their list is sense of humor, followed by self-confidence, enthusiasm, and high energy; interpersonal strengths such as empathy, and sensitivity to and tolerance of others; strengths such as curiosity and openness to challenges and change; ethical value such as integrity; and self-directing qualities such as commitment and perseverance." (*Schools of Hope*)

The child's first social environment is the home and the family. The newborn needs most of all a feeling of security and a sense of being loved and accepted. Unfortunately, whenever there is rejection, the psychically sensitive infant is very aware of this.

What tiospaye offers and what the biological family offers is a place that all members can belong to, regardless of merit, regardless of health, likeability or prestige. People are in by virtue of being born into a group. What Robert Frost valued when he wrote: "Home is where, when you go there, they have to take you in."

The most important factor for the child's social development which must be contained in the home – is the bonding with the mother or the caregiver. In our late 20th century we are seeing less of the bonding force that holds the family and society together. A constant presence, the mother or any caregiver is essential in the very first days of life. This interdependent relationship leads to bonding between mother and child.

The lack of early bonding leads to antisocial behavior in later life. The child grows up trusting no one, lacking security, full of fear and apprehension. Dr. Montessori was concerned about what kind of society we are preparing for our children – one full of violence, crime and drugs, sex, child suicide, deteriorating family and social strategies? How can we help our children develop strong characters, so they are able to master their environment, and make their contribution, rather than become victims of it?

Today we seem to have lost the good sense – common sense that guided human behavior, Now we subject ourselves to science and technology instead of our own intuition. Once the will is there, the sincere desire to know what is best for the child, common sense will help us discover what to do.

Social interaction begins at birth. Through feeding, touching, holding, eye-contact, bonding between parent and child is established and reinforced. Very early the infant begins to smile in response to verbal communication. Dr. Montessori says that the sound of the human voice is like "heavenly music" to the baby, and he will fall asleep soothed and calm when his mother sings to him. That is why, all over the world people sing lullabies to their children.

The ability to smile is present from birth. Le Boyer's pictures (*Birth With-*

out Violence) show the infant smiling soon after birth, instead of the primal scream. This is the result of the careful, considerate handling given to both mother and child.

Parents today are trying harder than their parents did, yet they are having more trouble with their children. If the child feels safe, wanted, and "at home" in the midst of activity, his view of later life will be very distinct from those of a child who feels unwelcome, unstimulated by experiences he missed, and was accustomed to living in a state of want. (*Continuum Concept*)

Communication in the home environment is an essential element to the child's social development. Dr. Montanaro says that communication with the environment must begin almost immediately. Even before the child has developed an articulate language he interacts with the environment through the movement of his head, arms, hands and legs, looking at people and objects in the environment, smiling, crying; thus he is in a constant dialogue with the environment. When there is little or no response from the environment, the child is deprived of interaction. *(Understanding the Human Being)*

We can help the child immensely by providing the very best language in the environment. That is all she needs. She is in the sensitive period for language, and can master any language with great ease and joy. For this sensitivity we provide all that the child needs, because our environment is saturated with language. I remember Dr. Montessori saying: "This is why nature has entrusted the baby to women, because they can't stop talking!"

Read aloud to the child, even to the infant. The power of the absorbent mind is that it need not understand what it absorbs. We never know how we are affecting the unconscious mind of the child, what is being stored in the subconscious. Montessori says give the very best to the child at this age, because he is forming the foundation of his being.

Even after the child can read by himself, continue to read to him. It will be the best quality time you spend together, and will help in creating trust and bonding.

Another important means of expression is movement.

Montessori says: "It is only by movement that the personality can express itself ... In fact, this whole apparatus of brain, senses and muscles, is often called the "system of relationship", meaning that it puts man into touch with his world, living and non-living, and therefore with other people."

At first the baby's movements are reflex movements. Yet, even these have a purpose. While the baby lies on his back, he constantly kicks his legs in the air. This is nature's way of strengthening the muscles of his back and legs, to prepare for walking; and the mechanical babbling at six months is an indirect preparation for speech. Montessori learned the important principle of indirect preparation from nature, and applied it to her method of education.

The child's potentialities can only be actualized through movement, through purposeful and constructive work. The first intentional movement is seen around six months when the child attempts to grasp an object. At this age the simplest objects will suffice to satisfy the child's need for activity – filling a pail with pebbles, emptying it and filling it again; opening and closing doors and drawers, over and over again. An older child will wash his hands five or six times, or polish a brass vase many times.

We see the human tendency to repeat, and this has a constructive purpose: coordination of movement, which means the coordination of intelligence, will, and movement; mind and body are working together, resulting in the integration of the personality.

Provide purposeful activities for the child at each stage of development. Help the child to take care of himself and to take care of his environment. As they grow older there are so many ways in which the child can participate in the home environment. But let's not think of them as "chores". If we start early enough, children really love to do them, and they become a habit, a part of life.

There is a sensitive period for order, order of things in the environment, and order in the daily schedule. They need to have a place for everything and everything in its place. Give the child a special place for his things, within reach of his eyes and hands, and let him put away his things by himself as soon as he is able to move around.

If we allow him to do this while he is in the sensitive period for order, it will become part of his nature, and there will be less problems with teenagers cleaning up their rooms. Even more important is that this external order leads to an inner order, a logical and reasoning mind. This will greatly help in the development of the mathematical mind, another human tendency that Montessori has mentioned. She says that mathematics comes naturally to all humans. All humans have the tendency to count, to measure, and to enjoy shapes and symmetry.

Coordinated movement leads to independence. The young child who can take care of himself, dress, bathe, eat his food, button his coat, is following the direction of nature towards functional independence. There are many ways in which the child can help in the home, washing, preparing food, cleaning, polishing, sweeping, dusting. The child always prefers purposeful activity to play.

These activities of our daily life are the first activities the child sees done in the home, and begins to understand. They are brief, simple, utilize concrete objects, and are performed daily. The child sees a beginning and end, and he begins to anticipate them. Thus he builds up his intelligence.

For 12 months or more the child observes these activities being done, day after day. To wash the dishes manually, rather than use the dishwasher, enables the child to see the whole process. This is when the foundation for the intelligence is laid (not at college or the university). It is certainly worth our while to invest in the child at this early age.

When he can move on his own two feet – now he wants to do these activities himself. He says: "Mom, may I help you?" Here is the will coming into play, following the understanding. If we can provide simple tools for the child, real tools, not toy brooms and brushes, there are many things children can do in the home, which will give them self-confidence and help them feel they are making a contribution to the family.

Dr. Montessori says: "A man must be independent in his powers and character, able to work and assert his mastery over all that depends on him." (*Absorbent Mind*, p. 209) True adaptation is the ability to answer one's own needs and support the needs of others. As independence expands, he grows in his sense of becoming and belonging. This brings about responsible interaction with others and the environment.

Freedom and discipline are two important principles in a Montessori environment. It was the children who showed Dr. Montessori that these two elements, often considered opposites, should exist side by side to help the child in his development.

We must reevaluate the traditional values and beliefs of these two terms. Many think of freedom as being able to do whatever we want to do; and discipline as being made to do what we do not want to do.

Freedom in the Montessori environment has often been misunderstood. Some believe that children are allowed to do whatever they like. It was a child who once said to a visitor who asked: "So this is where you do what you like?" and the child answered: "No Ma'am, this is where we like what we do!"

If freedom is given without limits and responsibility, it is not true freedom. It amounts to abandonment and neglect. Children who are abandoned in this way do not accept any kind of authority and become antisocial beings.

We must set guidelines from the very beginning. The child must always know that there are limits and consequences to what he can do. At the same time we must not inhibit the child's development by being too strict. We must avoid both extremes of permissiveness and authoritarianism. With too much permissiveness, the child becomes compulsive, aggressive, self-centered, abusive and rebellious. With too much authoritarianism the child will be unable to think for himself, will become desensitized, and will follow rules only when adults are around.

The ideal to strive for is to be authoritative. Set rules. Believe in the rules you set, be consistent, and explain the reasons for the rules, so that children become aware of consequences and internalize the rules as personal standards. In this way the child will develop self-discipline and be able to experience real freedom.

Dr. Montessori's great discovery was that the child is born with an inner discipline. This discipline is found in everything in the universe – animate and inanimate. We observe the perfect order of the movement of the stars, so their positions are predictable thousands of years hence and known thousands of years ago.

The child has an inner discipline that guides his life, and he lives in complete obedience to these laws of nature. The word discipline comes from the same root as the word disciple – one who follows a leader, a teacher, based on trust.

If we can understand that the young child has no choice but to follow the natural laws of life – we would do all we can to support him. We would make provision for the child to move freely, to touch, to explore his environment, by making it safe for him and providing simple objects with which he can be active. This is to support the child's self-construction.

But the child needs to live with others. So he needs guidelines, an external order, a path to follow, so he can live together in harmony with his family, with his friends, with the world around him.

We must prepare these guidelines for the child, making sure that they do not contradict the natural laws that guide her life. This is often the cause of conflict between the child and the adult, who dearly love each other. We cannot ask a two year old to sit still and be quiet, or not to touch things, because this is not her will that makes her act this way. It is the unconscious *horme*, the life force within the child, the drive within her that forces her to live and work.

These natural energies cannot be denied. Yet, in order to help the child adapt to others in the environment, the child needs an external discipline, so we must provide guidelines to help him.

From the very beginning the child needs to know what our expectations are. We must have guidelines so we respect and care for each other, respect each other's needs, and freedom. The rules must be simple and few, and they must apply to all of us, adults and children. If the rules are in accordance with the laws of life, and the child understands them, he will obey them.

Obedience. Life would be so wonderful if children were obedient! We demand obedience from our children because we say "it is for their own good." But if we know about life, about the child who is in course of development, we would know that the young child has no conscious will. He acts driven by an unconscious energy, the *horme*, to which he is obedient.

To allow the child to live according to the dictates of the hormic energy, to let him explore his world using his senses and allowing him freedom to move, to touch, to feel, to taste, to smell, enables him to lay the foundation for his conscious will. Sometimes it is thought we should break the child's will at this stage. But there is no will to be broken.

As she becomes conscious, the child begins to understand what we say, what we require of her, and because of her great love for us and her desire to please us, she is sometimes able to obey and sometimes not. Its hard for us to understand this, and we think when she was obedient yesterday, why is she being stubborn now? Again it is not a matter of will power. When the child does not obey it may be due to a lack of understanding or a lack of capacity to accomplish the task. It is up to us to understand this.

Real obedience means to sublimate one's will to that of another. So we must wait until the will is developed to expect obedience.

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If we can help the child during the unconscious stage to be obedient to the natural tendencies and not contradict them ourselves, there appears what Montessori calls a third level of obedience – when the child simply waits for our commands, waits for us to ask him to do something. Now he carries them out with great joy, and then we must be very careful how we word our request. Once a teacher said: "Put away your things...", and she meant to add, "before you go home", but the children immediately began to obey her!

The adult's responsibility is not to discipline the child, but to allow the child's inner discipline to grow and develop. This cannot be done by teaching and sermonizing. To help the child be disciplined we must be disciplined ourselves.

The child simply absorbs whatever he finds in the environment – whatever is living in the environment. We must be living examples of discipline. We must be orderly, purposeful, focused, punctual and show that we are in command of ourselves and of our environments, whether it be home or school. All this the child will absorb.

We must speak clearly in a pleasant voice. Make sure the child understands what you say, make sure the child is listening, and make eye contact with the child. Use only as many words as are necessary and sufficient; don't ramble along aimlessly.

We must follow the natural tendencies of the child. The child learns and builds himself through exploration, order, orientation, work, reasoning and the mathematical mind.

The very young child explores his environment using his senses and movement. Our home environment should provide materials that he can touch, manipulate, see, taste, smell and hear. And the child must be left free to move about and experience all these sensations. These sensorial impressions are the building blocks of the intelligence. Aristotle said: "There is nothing in the intelligence that was not first in the senses." That is why Montessori gives so much importance to the education of the senses, the refining of the senses.

The child from 6 to 12 years, now armed with language, both spoken and written, now guided by his reasoning mind, explores the society he lives in, and the universe at large. This is the sensitive period for the imagination, and what we cannot present to him in concrete form, the child can understand from books, museums, planetariums, libraries, and through meeting people of various disciplines and cultures. Help the child with your own interest to widen and expand his knowledge.

This is the age of reason and imagination. Montessori believes it is the most intellectual period of human life. Add to that the child's own endeavors. He needs to be challenged – he challenges himself, by setting himself great tasks no adult would dream of asking a child of this age.

The tendency to work is a human tendency. It is work that nourishes the soul. The young child works with exactness and precision and that is what attracts him and interests him. He tries to work following the same precision that we show and then he is successful. That creates interest because he understands. That results in repetition, not so much to perfect the activity but to develop that inner integrity of the personality. We call it coordination of movement, which is coordinating the intelligence, will and movement. And the child concentrates.

Montessori says concentration must form the basis of all education, of all development. The child who concentrates is perfecting himself. He is on the way to what Montessori called the *normalized child*.

From the beginning of our human history people have thought that certain characteristics were "normal" to childhood – like noisiness, disobedience, unruliness, disorderliness, selfishness, stubbornness, etc. We hoped they would outgrow them as they grew older. Montessori says these are not normal to childhood, they are simply common, and because so many children throughout the years have manifested them, we have called them normal. This judgment has been made on the basis of statistics, the larger numbers, the average.

Montessori discovered a "new" child, the child who was obedient, laborious, considerate, concentrated, joyful, able to care for himself and his environment, generous, and orderly. Dr. Montessori defines normal as being according to a law. Norm literally means "law". So, the laws of life.

Twenty-five years after starting her work with normal children, in all parts of the world, she found that wherever certain conditions for life were provided, there always appeared these characteristics of the normalized child.

The former characteristics, mistakenly understood as belonging to childhood, Montessori calls "deviations". Deviations are not "abnormalities". Montessori calls them "a sickness of the soul", or arrested development. They are simply a detour from the path of normality, caused by lack of proper conditions in the environment, that is, lack of purposeful activity and lack of freedom. These are temporary characteristics and can be overcome easily between the ages of three and six years in a prepared environment. We only need to find the child some work that will interest him, and give him the freedom to pursue it.

Normalization is the process that leads the child from deviations back to the path of normality. Dr. Montessori says it is the single most important result of her work. It was this discovery that led her to give up her flourishing medical career and follow the child.

Dr. Montessori says in the *Secret of Childhood*: "The most pertinent (manifestation of the children) which seemed like a magic touch opening the gates to an expression of normal characteristics, is a consistent activity concentrated on a single work, an exercise on a single object, where the movements of the hand are guided by the mind. And here we find the unfolding of characteristics which plainly come from an inner impulse, like the "repetition of the exercise" and free choice of objects". It is then that the true child appears, aglow with joy, indefatigable because his activity is like the psychic metabolism to which life and hence development is attached. From now on it is his own choice that guides him. He responds eagerly to certain tests, like that of silence; he delights in certain lessons which open a way of justice and dignity before him. He avidly assimilates the means that enable him to develop his mind. Whereas he turns away from other things, such as prizes, sweets and toys. Moreover he shows us that order and discipline are vital needs and a vital expression where he is concerned. ***And all the while he is a real child,*** fresh, sincere, gay, lively, shouting when his enthusiasm overflows, applauding, greeting loudly, thanking with effusion, calling and running after one in sign of gratitude. He approaches all, admires everything, adapts himself to everything."

Our goal too should be to help each child gain normality and the wonderful characteristics that accompany it. The reality is we are faced with children who have difficulties, children with deviations. We can help to cure them, or we can prevent them. Prevention is always better than cure. Here the home can help the child by providing the best conditions, so that the child enters the Children's House already on the path of normality, and there is no need for normalization.

The emotional atmosphere in the home is crucial and affects the whole life of the child. If there is love and affection, if she encounters friendly and accepting attitudes from people around her, the child grows up with self-confidence, trust and optimism.

We must empower the child, not try to control him. The child grows and develops because of certain conditions: unconditional love, caring, nurturing, feeling special. These inspire beyond all values. Children learn what they love. Empower the child so they have a deep root system and strong branches.

Help the child, who despite the problems of life can live a joyful life. The adult's responsibility is to protect and nurture the new life that comes into our care. The adult must purify her heart and render it full of charity. We must have a deep desire to know the child, hand in hand with a desire to know ourselves.

Our spirit will be one that thrives on truth. Our joy is in the child himself. We must model Montessori's understanding and incarnation of herself, as the servant of the child. Montessori says: "The relationship between the adult and the child is in the spiritual realm."

The child's task assumes a spiritual dimension. It includes the help HE offers the adult in our continued spiritual development.

We must give the child freedom to develop independence. Without independence he cannot reach the higher level of interdependence.

Independence is the result of working towards perfection.

Perfection is absolute, so it may not be achieved in this life.

So never let the child stop working towards perfection. Never discourage or praise unnecessarily. There is a very delicate, a very subtle balance here. Be sensitive without being picky or finicky. Never limit the standards by saying "good enough".

Independence is not the goal; it is a condition for freedom. The goal should be perfection. Perfection is experienced by true self-confidence. Help the child gain that confidence.

I wish to leave you with a quotation from Dr. Montessori: "Mothers, fathers, politicians: all must combine in their respect and help for the delicate work of formation, which the little child carries on in the depth of a profound psychological mystery, under the tutelage of an inner guide.

"This is the bright new hope for mankind. Not reconstruction but help for the constructive work that the human soul is called upon to do, and to bring to fruition; a work of formation which brings out the immense potentialities with which children, the sons of men, are endowed.

"Societies must heed the child, recognize his rights and provide for his needs. Once we have focused our attention on life itself we may find that we are touching the secret of mankind, and into our hands will fall the knowledge how it should be governed and how helped." (*Absorbent Mind*, p.16) ◆

Chulanganee Fernando attended a primary level training course given in 1944 by Dr. Maria Montessori in Sri Lanka. Ms. Fernando went on to teach for the next twenty years. During this time she also helped to found a training center in Colombo, Sri Lanka, where, under the direction of A.M. Joosten and Sister John Bosco, she was a trainer from 1957-1973. In 1973 she traveled with Mr. Joosten to the United States where they began a training center in St. Paul, Minnesota. Ms. Fernando went on to be the Director of Training for the AMI training center in Vancouver, British Columbia from 1984-1986 and 1988-1990, and currently serves as the Director of Training at the Montessori Training Center of Minnesota and as an AMI consultant.

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Working With Your Assistant

M. Shannon Helfrich

In most primary Montessori classrooms, there are two adults responding to the needs of the child. Dr. Montessori would most likely consider this too many adults for a group of 20-25 children. However schools in most states are bound by the day care codes or education statutes mandating a specific adult-child ratio and authorities are reticent to vary from this standard regardless of the nature of the program. For Montessorians the challenge is to accommodate this situation in a manner that still frees the children to act on their own behalf, fostering functional and social independence, while at the same time utilizing the expertise of the second person. This may require education and adaptation on the part of both adults.

There are four keys to success in a primary class with two adults:

- establishing a working relationship between the guide and the assistant,
- clearly defining the roles and expectations,
- modeling behaviors and manner of interacting with children,
- utilizing the skills and abilities of the assistant in ways that preserve his/her self-efficacy.

First and foremost is the establishing of the working relationship. Some guides participate in the interviewing and hiring of their assistant, others do not have that opportunity. It is my experience that neither approach guarantees success. The question is how and where does a solid working relationship begin? It begins before school starts and the children arrive. Most programs have a period of weeks prior to the arrival of the children that is intended for the preparation of the environment and the building of the school community. This is a great time to get to know your assistant. Engage them in the creating of the environment. This can accomplish a number of purposes:

- a bit of basic philosophy can be shared while explaining why the environment is arranged as it is and how this benefits the children,
- this can be a time to discuss how the environment is cared for,
- it is a time to discover specific areas of interest or talent that the assistant brings to the class community,
- this can be a time to discuss together the routines for the first few days and the routines that will provide a structure for the children's interactions.

Take your assistant shopping as you purchase those last few things needed for the beginning of the school year. This is a more relaxed and casual time when you can get to know each other a little. The value of communication cannot be overly emphasized here!

As the year begins, establish a time and routine for communication with your assistant throughout the year. Failing to plan and organize for this aspect of on-going communication is dangerous. Most of us believe that we will make time for whatever needs to be discussed without any overt structure. This usually leads to a lack of communication and the escalating of difficult situations because there is no forum for discussion built in on a regular basis. This is too important to leave it to chance! Some guides plan a set time daily or at least weekly for discussion, others offer the assistant a notebook in which the assistant can record observations of things she enjoyed, things that bothered her, things that are confusing and about which he/she would like clarification or has questions. Sometimes, the guide's response could be written directly in the notebook and didn't require further dialogue, but many times it brought issues to the surface or to the attention of the guide at the very time the dialogue was crucial. These are only two ideas of things that can be done to foster on-going communication. Each guide needs to find his/her own format. What is important is that you have one!

The second task is that of defining roles and expectations. Many a new guide responds to this by saying, "But, I don't know what I want the assistant to do." Even if this seems common or appropriate for a new teacher, it is fraught with danger. The guide is the one Montessori trained adult in the environment. It is the guide's responsibility to create the basis for a harmonious atmosphere. Even more important, the assistant can't feel confident and secure in her interactions with the children or the guide, if the expectations are a hidden or undefined agenda. We many times function with the erroneous assumption that she'll just know what to do and how I wish it to be done. Certainly, our expectations have to be appropriate to the needs of the group and how they are best served by the two adults. Some assistants are best suited to doing observations and having limited direct interactions with the children. Other assistants have learned, or are learning, the techniques for interacting and take on a much more active role in the environment. A lot depends upon the individual's personality and background. Regardless, think through completely the roles and responsibilities of the assistant. Show where the materials are that will be needed, just as we would do with the children. This brings us to the third challenge.

This challenge requires modeling for the assistant those behaviors and patterns of interacting that we ourselves model and in turn, wish the children to adopt. Where to be during the morning greeting and entrance procedures, how to greet, and how to offer help when it is needed. Social interactions are the lifeblood of a smoothly running primary classroom wherein the adults and the children apply their grace and courtesy. The children learn from both adults what to say in certain interactions and situations. If we offer a mixed message, we leave them confused and the assistant feeling incompetent or humiliated. It is impossible to anticipate each and every situation that is going to occur during the year, but we can be prepared for those common occurrences encountered in all groups of children. One of the most important things we can model is how ***not*** to intervene when children do not need our help. It can be a new learning experience for many assistants to know when to stay out of the way, or how not to attract attention to the adult, thus stimulating independence. It is no small task to overcome our natural instinct to "help."

It may sound to this point as if we have established a strong framework for a non-functioning assistant. As most of us know, the assistant can be a great asset to the class community. This brings us to the fourth challenge: that of using the talents and interests of the assistant for the benefit of the community. At the beginning of the year, that extra pair of hands are vital. New children require great attention from the guide as they are helped to orient to this new place. The assistant can be a help in helping the older children settle into work choices while the guide attends to the new child. At the beginning of the year, there are fewer children who are independent in getting their own supplies especially for practical life related activities. This is one area where the extra hands are critical.

As the year progresses and the group becomes more self-sufficient, the assistant's role will change. I'm not sure if this is the right moment to insert one of my well-known "soap- boxes", but I am going to anyway. There are really only two things that assistants may **not do:** this is give presentations and serve as the class disciplinarian. The assistant is not trained to do presentations and has not spent time honing the analyzed movements necessary to connect children to the matérials. To then assign the assistant to the role of class disciplinarian so you are freed to do presentations is just as inappropriate. It is the guide's responsibility to define, establish within the group and follow through on the limits and behaviors appropriate to the group. It is the guide who models these behaviors and attitudes and who is trained to build this atmosphere as a part of creating and maintaining the environment. Beyond these two "shall not's", there is great diversity in the things that the assistant can do and these activities are at the discretion of the individual guides. I am reluctant to give any list of possible activities, as there are so many strong opinions about what assistants can and should do. However, let me offer you some possibilities to think about. Assistants, within the parameters of their own comfort zones and abilities can do these types of activities:

- Read to children;
- Sing songs with the children, or teach new songs that they have checked out with you for appropriateness;
- *Listen and Do* language games, once they have learned the technique and use your guidelines for different levels of vocabulary;
- *Bring Me* games in language or mathematics;
- Story problems as summaries of decimal system operations with golden beads;
- Naming language cards or map pieces;
- Writing slips for those children who are practicing reading;
- Telling true stories;
- The *Sound Game,* after you have accessed his/her ability to articulate the phonemes and to mix a variety of experience levels according to the makeup of the group of children;
- Assisting the guide with the organization of outdoor activities – either in the garden or in the play areas.

These are all activities that involve direct interaction with the children. As the group becomes more able to meet their own needs, these more active roles diminish.

Here are some ideas for the assistant that do not involve direct interaction with the children:

- Material-making – this can be a great help in a class, especially in keeping the language area alive;
- Assisting with the initial preparations of snack and/or lunch, even though the children may be able to do much of the work after the initial gathering;
- Assisting the guide with the care and maintenance of the prepared environment. This is a never ending task and requires two sets of hands, although I have had groups of children who were incredibly eager and efficient in taking on this role.

All in all, your assistant can become a great companion as you journey together with the children. We talk of the primary environment as a Children's House. In a smoothly running class, the children feel as if they have two loving, sensitive, caring "caretakers" who are there to assist them along their path. Just like parents, we serve best when we facilitate and can avoid being an obstacle to the process unfolding in front of us. ◆

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Montessori in the 21st Century

Paula Polk Lillard

You have no idea how glad I am to be here tonight as the author of *Montessori Today: A Comprehensive Plan of Education From Birth To Adulthood*. Many of you knew that I was writing a book highlighting the elementary level. Many of you would see me at a conference or workshop and you would cheerfully ask, "How is the new book coming?" I can't thank you enough for doing that. It is what kept me going. But, you must have wondered what I was doing all that time!

Actually, I *was* writing a book; in fact, I wrote three of them – the last one of which, my editor informed me, would have printed up to over a thousand pages. I threw away each book in turn without keeping so much as one page for notes.

Why should *Montessori Today* have been such a difficult book to write? It was because my goal in doing so was formidable: to understand the whole of Montessori ideas from the child's birth to adulthood, and then to put these ideas in the clearest possible terms for the layperson.

It was the profoundness of Montessori's ideas, of course, that made this goal so challenging. Montessori really did mean to revolutionize our core beliefs about human beings: how we intuitively theorize about human minds and how they develop through the process of learning – what Jerome Bruner in his new book, *The Culture of Education*, calls our "Folk Pedagogy and Folk Psychology".

What kept me at my task over these past six years was my conviction that the world is, at long last, ready to hear the Montessori message. The educational scene throughout the world is poised for change. In the United States, the general public is well aware of the plight of today's schools, both public and private. In addition, parents are familiar with the name, Montessori, if not its full implications, as an alternative to our present system of schooling. In fact, the largest area of growth in Montessori education today is occurring in the public sector.

Montessori has always had a presence worldwide, but there is a hunger for it today in developed and developing countries alike that is unique in its history. At this conference, I was speaking to a woman from the Philippines who told me that there are four thousand students in her Montessori schools. Earlier this year, I spoke to hundreds of enthusiastic Montessori parents in New Zealand and Australia, and when I spoke at the Maria Montessori Training Center in London this past June, there were trainees and teachers from Botswana, Kenya, Hong Kong, India, Taiwan, France and Sweden in the audience. I think it is significant that Taiwan is the first country to ask for the translation rights to *Montessori Today*.

It is the realization that education today must involve preparation for life rather than rely on a set curriculum which merely prepares the recipient for further schooling, that is fueling this interest in Montessori education. On several occasions, when I was discouraged in my writing, I attended meetings at Lake Forest College where I serve as Chairperson of Academic Affairs for the Board of Trustees. I came away each time with renewed conviction that I must complete this book. College professors are increasingly alarmed and discouraged by the inadequate preparation of their students for life itself. They lament the students lack of skills for clear, logical thinking, organization, self-expression, independence, and above all, responsibility. College students today need what Montessori education provides.

Professionals in the field, at long last, are recognizing that a revolution must occur in education if the needs of students for the twenty-first century are to be met. Bruner, in *The Culture of Education* describes our outdated educational system as based upon the "blank slate view of the mind". Such a view led logically to a set curriculum driven by objective testing such as the SAT (Stanford Achievement Test). When a child "doesn't get it" in such a system, his or her mental ability can always be blamed. We give these children a variety of labels. Inevitably, they suffer from the degradation that results when human beings are stereotyped instead of being recognized as unique in abilities and, therefore, unique in needs.

In fact, we are developing a larger and lagger population of children in the regular school system who are labeled as dyslexics, learning disabled, attention-deficit-disordered and hyperactive. While these diagnoses can be valid and useful in some instances, they can be exaggerated with unfortunate results for individual children and for the educational system in general. In reaction to such an unfortunate situation, the following bit of humor occurred in the *New Yorker* magazine. It seems the writer has learned of a new "affliction" in children. It is called "Hyperlexia". Children who suffer from it develop "an unusual interest in letters and numbers, and learning to read and write too soon. In other words, they are bright children".

Bruner proposed a new approach to education which is consistent with what we now know about the human mind and its development. Far from being a "blank slate", neuroscientists have discovered that the human brain is engaged in a constant process of change from its earliest beginnings. The outer environment, as well as inner thought, affect its development in complex and diverse ways. Learning is no simple matter then of input by the teacher and output by the pupil. Rather, it is a continual interplay between inner and outer forces which dramatically alter the organic structure of the brain.

Listen to Bruner's key proposals for an education that recognizes this complexity in the learning process. He calls for schools that:

- One, involve a "subcommunity of learners" within each classroom – mutual learners that operate as a team with division of labor to produce mutual works.
- Two, build upon children's help to each other and "where being good at something implies, among other things, helping others get better at something."
- Three, provide an "entry into the culture, not just a preparation for it."
- Four, recognize the benefits of cultural myths and stories in helping children to build a personal narrative of the world, and "to envisage a place for themselves within it."
- Five, realize that human beings can derive the unknown from the known and that what is needed in their schooling is for children to learn to think with what they "have already got hold of". "Less is more" is intrinsic to such a paradigm.

Emphasis on interactive, reflective thought is the underlying theme behind Bruner's proposals. His goal in education is to help children "to realize that they know more than they think they ever knew, but they have to 'think about it' to know it."

The poise and confidence of our Montessori children comes from the opportunity which they are given for this "deep thinking", doesn't it? The "keys to the world" in the primary and "keys to the universe" in the elementary set the children off on a lifetime of thoughtful responses to their environment. They are given the opportunities to repeat their explorations and complete follow-up work after presentations with as much freedom as they can handle and as much time as they wish. They are encouraged to think about the needs of others, too, and to help each other in a community of others from the time they are eighteen months old. They have the opportunity for "going out" as elementary children and becoming part of the larger society and discovering their place within it. They are introduced to the heroes of our culture who can inspire them to search for the potential heroism within themselves and help them determine what might be their own role to play within society when they become adults.

This confidence in their own mental powers may be the best "aid to life" which Montessori gives to children. It is, after all, "thinking about thinking", as Bruner defines creative thought, which has taken us to another dimension of living as human beings. All the great discoveries of the twentieth century in physics, chemistry and biology are its products.

This reality was brought home to me this summer in my reading of two books by Nobel Laureates: *Six Easy Pieces* by the physicist Richard Feynman and *Vital Dust* by the Belgian biologist, Christian de Duve. I recommend both books to you, particularly if you are elementary or secondary level teachers. *Six Easy Pieces* describes the forces of nature, as we know them today, for the layperson. *Vital Dust*, which discusses the evolution of life, is particularly thought-provoking in its discussion of the meaning of life and its future in the universe. These are essential topics which we must have positive convictions about if we are to counteract the despair which our children are continually barraged by in our present day society.

In summary, the education which we need for the twenty-first century must develop "thinking about thinking" in children. It must be, in Bruner's words, "participatory, proactive, communal, collaborative, and given over to constructing meanings, rather than receiving them".

This *is* Montessori education. This is what we do everyday in our classrooms. The challenge before us then is this – "Will all children, not just a fortunate few, have the opportunity to benefit from the insights of Maria Montessori?" Our progress in this direction depends upon two outcomes: the development of authentic Montessori classrooms worldwide and our ability to explain what is happening in them to others.

This excellent conference has been about carrying "principles into practice" in our classrooms. We have benefited from Montessori training courses, but continued learning is essential to the pedagogical integrity of our teaching. Only by being good learners can we be good teachers. Attending conferences, and workshops, as well as our required consultations and visits by trainees, are important to this continued learning. However, our ongoing education on a more private level is equally important. We need to be constant in our reading in diverse areas and to discuss what we are learning with our colleagues. In our school, we accomplish this by scheduling an additional hour to our weekly staff meetings so that we can discuss a book that we mutually have chosen to read. This book discussion time together inevitably leaves us feeling inspired about our work, no matter how difficult the day or week has been. It's safe to say that it has saved us from "burnout" on many an occasion, especially in the February-flu season!

Mihaly Csikszentmihalyi, Professor of Psychology, University of Chicago, in his best selling book *Flow*, writes that to be truly happy, it is essential for people to "keep on learning until the day they die."

The best possible Montessori classrooms may not be sufficient by themselves to spread Montessori education worldwide, however. I believe that people have to know about these classrooms and what makes them so helpful to children.

This necessity was first brought home to me when I was a young mother of four children in the 1960's. I had newly discovered Montessori and was trying to explain my enthusiasm to my father. He listened politely to my lengthy explanation. At its end he said, "Well, Paula, it's all fine and good that you are so interested in this, but I don't see how you are going to promote something that you can't explain any better than that." I went home to write, *Montessori A Modern Approach*. I have written *Montessori Today* in the hope that it will do for the whole of Montessori ideas, and particularly the elementary and secondary levels, what my first book accomplished for the primary.

In conclusion, I want to say something about the writing process itself and the effect it has on me. I have alluded to my struggles in writing *Montessori Today* but I want also to mention what a privilege and an inspiration it was to live with the vision of Maria Montessori on a daily basis during these recent years of writing and teaching. I came to understand Montessori's insights about the Human Tendencies and the Planes of Development and their role in the child's self-construction, particularly in brain development and the relation of the hand to the intelligence, in a very deep and profoundly personal way. They are a part now of my everyday thinking about life.

The discipline of having to express our thoughts in writing for others can have this profound effect on any of us, just as when one of our children chooses to help another child with a particular material and the teaching process deepens his or her own understanding of it.

Therefore, I want to encourage any of you who have an interest in writing to take the time to write down your thoughts about Montessori on an ongoing basis. You may conclude this process by writing books as I have done. You may write articles for magazines and educational journals. You may prepare parent hand-outs and newsletters for your schools. Whatever the end-product, your focus and inspiration for education will be increased and you will help to create the next generation of Montessori authors.

Let us go back to our classrooms and schools now, renewed in energy and purpose, knowing that we have something to offer children and their parents that can make a difference in their future lives and in the lives of us all. Thank you for the opportunity to be your banquet speaker and to be with you in these past days of inspiration and renewal. ◆

Paula Polk Lillard helped launch the first scientifically designed research study on Montessori education. Conducted at the University of Cincinnati, three Montessori preschool classes were established and evaluated. The resulting Sands School Montessori program is a prominent alternative school within the Cincinnati public school system for children aged 3-12. In 1983 Ms. Lillard received her AMI primary diploma from the Milwaukee Midwest Montessori Institute. She is a cofounder and current administrator of Forest Bluff School. Her book, *Montessori: A Modern Approach*, has been published in seven languages and is internationally known. Her most recent book, *Montessori Today*, concentrates on the elementary and middle-school years. Ms. Lillard currently serves as a member of the Board of Trustees at Lake Forest College.

Classroom Management – The Path to Normalization

By Sue Pritzker

The reality versus the theory: how often have we been faced with that Montessori dilemma? As an administrator, Montessori guide and AMI school consultant, I have seen such creative struggling with *how to make it work*. I have seen the same struggles repeated in schools in numerous cities and I've so often heard: "They didn't teach me how to handle this chaos in my training!" I have ventured to remind them that the answers were all in the training (or in the work of Maria Montessori) while suggesting a few practical steps to get things back on track. Returning to the writing of Maria Montessori inevitably rekindles my faith and my knowledge that the basic principles that were developed through observation of the young child will stand the test of time.

It was my good fortune to have four dynamic trainers in my first Montessori experience during my AMI training. The daily dialogue created a personal foundation of acceptance – needing to find my way was a challenge, not a failure. I have worked thirteen years in a classroom setting and ten administrating. I've witnessed the starting of a class twice and I have seen the value of setting the groundwork in that first year. I worked as an assistant for one year and every moment was invaluable. I wasn't allowed to give lessons, but was offered the opportunity to prepare the outdoor environment. I had trike washing and sink and float in a hole in the ground. The playhouse was a reading room and the fences were sandpapered to a sheen! Another early experience was less than idyllic. I nurtured two year olds in diapers, had little choice in who was enrolled in my class and I absorbed full responsibility for the all-day support staff.

In retrospect, it is hard to believe all that I had to learn: what I wanted from an assistant, how to engage the energy of parents in their child's experience and how to deal with the day-to-day demands of a school community – meetings, collaboration, compromise, and humility. And when I was beginning to feel comfortable and I had seen the unfolding of a normalized class, I moved to an urban school that needed leadership and a return to basic Montessori principles. No time to rest. I had to patiently help people who were struggling just to keep things in control. I had to help create a board that supported the structure and protected the staff. I had to assure that the needs of the children were met all day and year round. My only possible conclusion is that there are basic principles that bind our collective efforts. There exist many unique Montessori cultures. They, for the most part, have the same intent – to provide a prepared environment that is, at once, stimulating and peaceful; one that offers a microcosm of our world available for free exploration by the child without unnecessary intervention of the adult.

Classroom management: the tie that binds. What we do with the information we have should make it all work. When there is a disparity between that image and our reality, we look for answers. We start by redefining our terms. Maria Montessori, in the *The Montessori Method*, gave a foundation for the discussion of classroom management with these words: "a room in which all the children move about usefully, intelligently, and voluntarily, without committing rough or rude act, would seem to me a classroom very well disciplined indeed". Many of you may now or in the past have experienced a classroom environment that represents those words. But many Montessori practitioners feel a great failing when this picture eludes them. Before one can assess their situation as a shortcoming, it is important to use a quick checklist to put your efforts in perspective:

- How many children have been with the class one year or less?
- How many children started in the middle of a year?
- How many adults have guided the class over the past three years'?
- How many of the parents encourage independent activity at home ?
- How many children possibly have special needs?
- Do you have enough space for the children?
- Is there a supportive classroom assistant in the environment?
- The Baby Check: Are there children in the environment who are tired, hungry, emotionally in need?
- Do you have a trained or knowledgeable administrator?
- Do your children have a full plate of sensory impressions already at home?

And then it is important to acknowledge your answers to the above questions. If your group is not well-balanced or has not had time to develop over three years, your goals will need to be adjusted. You cannot expect as much as quickly if you are compensating for some of the issues above. Once you have an honest picture of what you are working with, it is important to evaluate the things that you can address.

My observations have uncovered one major obstacle for many Montessori guides – the adult-dependent group. Children must be independent. It is a premise of Montessori principles. Your group will not be normalized if you do not allow it. It is so important to read and reflect upon Montessori's words about the teacher, the guide. In *The Montessori Method* she notes: "Our new education is like a taut spring which provides an intrinsic motion to the whole mechanism. It is a driving force inherent in the watch itself and is not simply that of the person who wound it." (*The Montessori Method*)

We need to connect the child to the environment with short, simple, uninterrupted lessons and then we must retreat. I cannot find a place in

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Montessori's writing where she implores us to not let the child work spontaneously. So often our classes become adult-dependent because we are unwilling to step back from those miraculous daily discoveries. When I hear children consistently say: "I can't do it because I haven't had a lesson", I begin to wonder about a pattern that is developing and the impression with which a child is left. Dr. Montessori encouraged us to create an environment that did not present children with persistent failure. She created precise lessons timed to meet a child's periods of sensitivity. Well presented, the procedure of the lesson will be easily absorbed by the child and lead him/her to individual activity. But she also suggested that the adult should not inhibit the child's ownership of the work or be a required presence for discovery. She offered a wonderful example in *The Discovery of the Child* ("Observations on Prejudice") when she described a teacher beginning to correct the child when he began to color in a trunk of a tree in red. She suggests that the child will, at some point, discover that trees are not red. If the teacher intervenes at this moment, the child will miss that moment of individual discovery, even though it may be realized some time in the future.

"Many teachers intervene in order to restrain, advise or praise the children when they should not, and instead refrain from intervening when it is necessary." (*Communications* 4-95 from *Call for Education*, Vol. 1, No. 1, 1924)

I watched one day while a four year old persisted in conquering the zipper frame. He found a more secure position with the zipper carriage at the top of the table. Twice an adult passed him by and suggested that the zipper carriage needed to be placed near him at the bottom of the table. Twice, after complying with the requests, he reversed the position and continued on his way. I often wonder why many children do not seem drawn to the sandpaper letters and to the movable alphabet. Perhaps it is the initial teacher presence that is required for these activities that is a deterrent for some children. Are these lessons short and enticing? Does the child get excited about continuing to trace the letters on their own?

"Nor is it her aim to train a child to use the materials correctly. It would demand the continual active operation of the teacher in providing information and hastening to correct every mistake until he has learned his lesson." (M. Montessori, *The Discovery of the Child*, p. 149)

If our lessons are quick and we leave the impression that experimentation is the point, the child would come back more frequently. The sure sign of the adult-dependent group is the long line of children waiting in front of the guide's chair or stool. I've seen attempts to solve this problem which result in long lines in front of the assistant or lines and arrows drawn on the floor to indicate where to stand while waiting. A few simple grace and courtesy lessons on asking others for help or trying again if you are having difficulty with an activity can help all of the children undo the bad habit of teacher dependence. The long term result of teacher dependence is a multitude of management problems. If the adult is trying to give all of the lessons, solve all of the problems, and answer all of the questions, he/she will be having a lot to manage.

"It is my belief that the thing which we should cultivate in our teachers is more spirit than the mechanical skill of the scientist: that is the direction of the preparation should be toward the spirit rather than toward the mechanism" (M. Montessori, *The Montessori Method*, p. 9)

Many Montessori guides describe their major management problem as children who are not absorbed or concentrated on their work. All of the lessons and all of the representations do not *hook* the child sufficiently to initiate the cycle of repetition. It is enlightening to review Dr., Montessori's chapter on "Pampered Children" in the *The Secret of Childhood*. She offers heartening examples of discouraged teachers who wrote to her about unruly and unresponsive children. Her response didn't offer concrete solutions, but a simple guidepost: every child is capable of changing if they find an interest. She says that she "would not be able to site a single example of conversion taking place without an interesting task that concentrated the child's activities". I like to think of all of the activities in a Montessori classroom as ***a point on a circle***. We do not know at which point the child will intersect that circle in pursuit of an interest, but our responsibility is to be the ready connector.

The guide must follow the interest of the child and give that necessary lesson. The activities of the environment should not be seen as a vertical line, being presented only one after the other. Although many activities have definite and necessary prerequisite activities, there is much room for parallel work. The beauty of the Montessori materials is that they attract the children in a variety of ways. Our lack of patience may be the only deterrent to a tremendous new discovery. If we are trying to manage every experience and discovery we eliminate the spontaneous moment of interest that Montessori describes as a conversion. "And such Is our duty toward the child: to give a ray of light and to go our way." (M. Montessori, *The Montessori Method*, p. 115)

A third major problem that confronts most classroom guides at some point is a lack of order and respect for the environment. In this area, Montessori was very clear – the adult must be the guardian of the environment. I often observe that a small, yet specific, change in procedure or classroom rule can totally alter a management problem. I've seen classrooms struggle with lunchtime mess, only to discover that more detail and ritual at the luncheon hour becomes the key to everyone's interest in making it better. Napkins, placemats, plates and candlelight all bring significance to the daily meal together. Each step of the activity offers the child another sequential memory challenge and keeps their attention focused on the goal – that moment when, after all of the steps are done, "we" can eat together.

I observed an inspiring guide prepare for two months before a group of children invited their parents in for a formal tea party. No stone was left unturned. Each placemat and napkin was embroidered, all invitations were written in poetic form, and repeated lessons taught the children how to carry the cups without clinking the china, pour from the hot pots, and how to eat *petit-fours* one tiny bite at a time. When the moms and dads came dressed for the occasion, many in gloves and hats, the children were more than ready for a memorable experience – and skills to carry on to a later day.

Every object has a place and purpose in the Casa and this fact frees the child to become independent. The first question I ask when a guide says that she needs help with management is: "Do you think your children are truly independent?"

How often do they wait for you because procedures aren't in place for them to help themselves? Are they waiting for embroidery needles to be threaded or can they learn to do it themselves? Do they know how to wait for work, ask a child to tell them when they are done, or find someone who does know all the letters if they do not?

Do they find everything in the same place each day? Do they have a tidy way to store their work so that it has significance when they go to retrieve it. Are the objects really rotated regularly? Would you find fascination in mastering the words in the object box never again to see new objects and words to discover? The environment speaks to the children and tells them what to do. What is the purpose of aprons? They have a purposeful, protective use, but they are also a cue that helps the child prepare for work. They bring to the young subconscious mind a reminder of the body's physical place and activity. The words we use can also create order in the daily activity of the class. A child who is physically disconnected from the class – walking across rugs, disrupting work – can be helped by simply asking: "where is your body right now? what is it doing? where would you like your body to be? what are your feet doing now?" These simple questions may begin to bring order into this child's day. For the interrupter a few words that might help: "First you were watching, but now you are interrupting". Putting an accurate label on their activity may be a first step toward their conscious awareness of their body.

Lining up to go out of doors can be the worst of management problems. But thought through logically, it can be another successful procedure. Although our goal, idealistically, would be to avoid this collective effort, which generally interrupts the child's individual workday, making a line is a skill that will probably have a place in the child's future life. The goal should be ultimately to have the children do it alone. Take the steps one at a time:

1) Show a few children how to quietly remind the same three or four children that is time to go out when they have finished their work.

2) In small groups, show a lesson on how to pack up your work (without a sound and without hurrying).

3) Show many lessons on how to walk from your work toward the gathering spot.

4) Practice many times in small groups of four how to make a line just like walking on the line.

5) Tell the children that we will soon be doing this all together and decide upon a child who will lead the line.

6) Practice how to give someone your attention by looking at them, but not talking.

Give all of this lots of time in small group presentations and create some excitement about the day when we will try it all together. (Add in practice for putting on coats if weather dictates it.) When you know it will work, invite your leader to take over. The result is a collective group effort for which there is a desire to succeed – not just a daily compliance with an adult's needs.

"The child who does spontaneous exercises which lead to a healthy mental equilibrium will be able to adapt himself without losing his own individuality." (M. Montessori, *Call for Education*, Vol. I, No. 1, 1924)

Behavior Management is perhaps the most perplexing for Montessori guides. Deciding between the needs of the group and the needs and potential of the individual often becomes the issue. This is when the guide may need to assess whether an individual child's needs can be met by this guide and group of children. At this juncture it is important to revisit school policies, parental commitment to the program and any special assessments that may help determine if outside intervention is warranted. It is most helpful to the guide if school policy outlines in advance how these individual difficulties will be handled. If the enrollment contract outlines that policy, it provides the guide with a format for discussions with the family about expected action to be taken. Although the hope is that each child can grow toward independence in the Montessori classroom, instances may develop when it is not in the best interest of the child or group for a child exhibiting consistent behavior problems to remain. In the interim, the Montessori guide must provide as much order and consistency as possible. Frequently it is the growth of trust in the guide that can change the pattern of behavior for a child. Montessori suggested that when consequence for behavior is needed the child should be separated, but within eyesight of what he/she is missing. It is imperative that you remind the child of the consequence of inappropriate activity. Ask if they can tell you the rule. Try to have their attention without intimidation. Demanding eye contact may not be effective for a child already embarrassed by their behavior. Try the following: "We can talk when I see your body is ready to hear my words". Make it possible for the child to change and be careful to protect them from an image that they cannot alter. Everyday is a new day and that may be the day when this child makes their "conversion". A morning mantra with joyful visions of your little challenge can give you a new perspective. Check your verbal and body language to assure that you are giving them every possibility for success. While they are with you, keep working to find that one activity that will pull them over the edge to normalization. It may happen. After twenty-five years of daily life in a Montessori community, I never expect less.

The management of the Montessori curriculum is not just the management of a specific set of materials, but the management of a complex of activities that will activate a child's interest. Exploring some basic Montessori terminology or principles in relation to the materials will solve many difficulties.

- *Point of interest:* What one thing can we point out along the way that will refocus the child's attention?
- *Three period lesson:* Have I offered a simple contrast for the child to classify their impressions?
- Have I offered a multitude of opportunities to explore during the second period? (Included as an example at the end of this presentation is the exploration of flowers giving ideas on second period extensions.)
- *Control of Error:* Will the child know how to work independently, but be aware if the activity is incorrect?
- *Preliminary exercise:* Is there an activity (or activities) that I need to give first in order to assure success for the child?
- *Parallel exercise:* Is it appropriate for the child to do this while he is doing other activities in a particular area?
- *Key to the universe:* Is the child's exploration with this material creative? Is it likely that the exploration will lead to the integration of the abstract concept?

These principles should guide us in that split-second decision making about the child's work that we are faced with each day. When deciding about intervention or redirection, the basic principles that we know should guide us. Our reliance upon objective and regular observation will provide a time to reflect upon these principles. If we do not protect individual work, we will have difficulty managing a classroom. Maintaining a quiet, working environment is a prerequisite to work being done. Assistance from a classroom aide must neither increase interventions nor overstimulate the environment. Every interruption during a lesson gives the child engaged in the lesson the impression that he is not your priority at that moment.

There are some parts of the body of Montessori exercises that need some careful management for successful use. Sometimes I think that there is forgotten curriculum.

Function of word games, both oral and written, must be done early and with great spirit by the guide. The younger children are more intrigued by the syntax of the language and will giggle gleefully for hours about sentences out of place. The six year old will probably consider it odd that you would mix up the words. This work is absolutely elemental to the language program. It is the reading program – long before books are offered.

- *Cultural nomenclature:* Children need to know the names of the countries and continents before drawing maps or doing flag work. Five minute lessons on the names of the countries, flags, flowers, birds, etc. need to be done regularly each day. This creates a clear impression in the environment that we are always learning new words.
- *Memorizing math facts:* The fun part! This can be done in pairs. Many get stuck on the strip board which is designed to show only a limited aspect of addition. Make baskets or envelopes of the answers they know. Move this along like the sandpaper letters – a few at a time.
- *Writing before reading:* We must make the movable alphabet a tool for creative writing. Move quickly from words to phrases "red rod" or "hot dog" or "get set". Teach simple poems and suggest that the child write them:

  the hen
    ate yellow corn
    and laid an egg

  the black morning
    sees the sun
    peeking
- Use adjectival phrases: wet, green, terry towel or the dull, red pencil.

The child needs to see his/her words in concrete form, yet this work is primarily an auditory exercise. The child is fine tuning their sound discrimination by taking apart words they know.

Add phonograms as you go if they need them to write the words they want to use. Use start cards like: *At my house… In Africa… On the trip…*

One easy way to keep a comfortable flow in the room is to know which activities can be effective for groups when children want to work together. Have a three year old available to hold the golden beads when they are being counted, even if they are not in the decimal system lesson. Snack can be a together time – one child prepares, the other cleans.

Give a lesson on sharing cultural objects. Have cards that ask some basic questions about an object the child might share. Send home a note about what objects should be shared and give parents the list of important questions. Practice sharing by using the questions and then have a tray that will hold the sharing object and the questions in order that the child can explore the object on their own. The questions can be the format for independent work and some interesting stories.

- What is it called?
- What is it made of?
- Where does it come from (in the world)?
- What is it used for?
- Who uses it?

Think consciously about how and when your older children can be teachers. Have you taught them how to give simple lessons to younger children? If you haven't shown them what to do, they may wait until you ask for their help.

Classroom management is a most personal endeavor. Your knowledge of Montessori principles and your interest, analysis and decision-making make how you manage a Montessori class a specific product of you. Where you place the objects and how you connect the child to the people and things in the environment is unique. Hopefully, some of what I have offered today has inspired you to think about those choices you make and has encouraged you to go back to the source for your guidance. Few educators have the foundation that we have in the great body of words that were our gift from Maria Montessori. Those words become our plan of action.

"The spontaneous exercises which the little children do in our schools, choosing the work which they like and remaining absorbed in it for a long time, in an atmosphere of calm, fortify and indirectly prepares them for their future social life." (Maria Montessori)

Flower Study Activities

- Begin with the collection of flowers for the class – perhaps asking each child to bring two or three flowers that they know.
- Use the flowers for flower arranging. Give lessons on the names of the flowers in the room in three period lessons. Add flower cards, hopefully those that match a number of live flowers the children have learned.
- Be sure to rotate cards and bring in new flowers – if possible from a class garden.
- Parts of a flower cards – this is important to present early as flowers vary and knowing the part names will be a point of interest as the child searches for the pistil or stamen.
- Activities with the live flowers:
    - a) match to the cards
    - b) match to colors in the 3rd color box
    - c) dry flowers by hanging upside down with masking tape – allow children to do flower arranging with them
    - d) dissecting a flower – use a dark background if possible
    - e) collect dead petals for potpourri in a container where they can be tossed
    - f) use dried petals for sweeping exercise
    - g) boil petals in water to create dyes and use for painting or on fabrics
    - h) eat nasturtium for snack as part of a salad
    - i) use a flower press – save flowers to decorate tables for a party or put on cards for mailing (and many more ideas for using pressed flowers – book marks, story covers, etc.)
- Flower study: collect different flowers including local wildflowers for identification books, songs, handplays, names that are flower names, state flowers, definition books for parts of a flower ***(a must)***; smelling exercise with different pungent flowers lilac, honeysuckle, etc.
- Songs on the bells about flowers: *Daffodil* - GEC GEC GEGA GEC.
- Flowers around the year: pictures of local flowers during different seasons.
- Poems and stories: write the poems or songs you know from memory with the moveable alphabet.
- Planting flowers: bulbs using bulb vases, flowering succulents, herbs that flower like clover and parsley.

Have all of these possibilities ready (or in spirit) and wait to see which interest the child follows .... *then you can open the door.*

Sue Schmidt Pritzker received her AMI primary diploma in 1972 from the Montessori Institute of Atlanta. Ms. Pritzker worked first as a classroom assistant and then as a teacher for the next ten years. She went on to be an administrator at Marin Montessori School before moving to Portland, Oregon in 1987. She has been a teacher at, and the administrator of, Childpeace Montessori School for nine years and currently serves as an AMI primary consultant. In addition Sue currently serves as the president of the Oregon Montessori Association and received the OMA Outstanding Dedication Award.

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